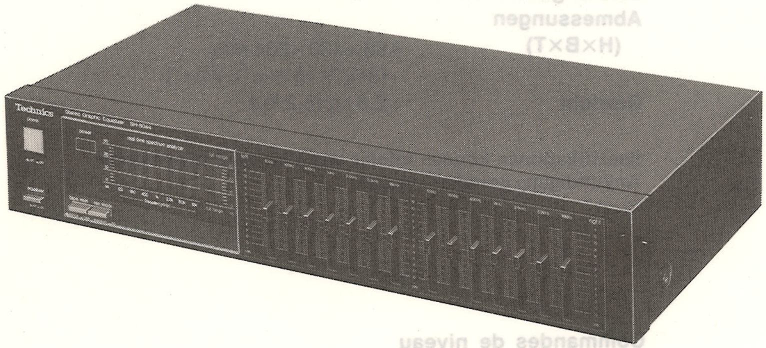
ORDER NO. HAD84072850A2

Service Manual

Equalizer

SH-8044

Stereo Graphic Equalizer



Color	
(K) ····· Black Type	
(S) ····· Silver Type	

Color	Area	
(K) (S)	[E] ·····	Scandinavia, Switzerland
(K) (S)	[EH] ··	Holland
(K) (S)	[EB] ····	Belgium
(K) (S)	[EF] ····	France
(K) (S)	[EK] ····	United Kingdom
(K) (S)	[EGA] ····	F.R. Germany
(K) (S)	[Ei] ·····	Italy
(K) (S)	[PA] ····	Far East PX
(K) (S)	[PE] ····	European Military
(K) (S)	[XL] ····	Australia
(K) (S)	[XA] ····	Asia, Latin America, Middle Near East, Africa & Oceania
(K) (S)	[NX] ····	Tourist in Japan

Please use this manual together with the service manual for Model No. SH-8044, Order No. HAD84072836C1.

SPECIFICATIONS

(DIN 45 500)

Frequency response (center position)	: 5 Hz~100 kHz, −1 dB
Maximum output voltage	: 8 V (1 kHz, THD 0.01%)
Rated output voltage	: 1 V
Rated total harmonic distortion	: 0.005% (20 Hz~20 kHz) 0.003% (1 kHz)
Input sensitivity	: 1 V
Signal-to-noise ratio	: 100 dB (110 dB, IHF' A)
Maximum input voltage	: 8 V (1 kHz)
Input impedance	: 33 kΩ
Gain	: 0±1 dB
Channel balance 250 Hz~6300 Hz	: ±0.5 dB
Channel separation 1 kHz	: 70 dB
Band level controls	: +12 dB~−12 dB (7 elements continuously variable per channel)
Center frequency	: 63 Hz, 160 Hz, 400 Hz, 1 kHz, 2.5 kHz, 6.3 kHz, 16 kHz

GENERAL

Power supply	: AC 50 Hz/60 Hz, 240 V (For United Kingdom and Australia) AC 50 Hz/60 Hz, 220 V (For continental Europe) AC 50 Hz/60 Hz, 110 V/120V/220V/240V (For other areas)
Power consumption	: 18 W
Dimensions (H×W×D)	: 86×430×234 mm, (3-3/8"×16-15/16"×9-7/32")
Weight	: 2.8 kg (6.2 lb)

Specifications are subject to change without notice for further improvement.

Technics

Panasonic Tokyo
Matsushita Electric Industrial Co., Ltd.
1-2, 1-chome, Shiba-koen, Minato-ku, Tokyo 105 Japan

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

TECHNISCHE DATEN

(DIN 45500)

Frequenzgang (mittelstellung) : 5 Hz~100 kHz, −1 dB
Maximalausgangsspannung : 8 V (1 kHz, THD 0,01%)
Nennausgangsspannung : 1 V
Nennklirrfaktor : 0,005% (20 Hz~20 kHz)
0,003% (1 kHz)
Eingangsspannung : 1 V
Geräuschabstand : 100 dB (110 dB, IHF, A)
Maximaleingangsspannung : 8 V (1 kHz)
Eingangsimpedanz : 33 kΩ
Verstärkung : 0±1 dB
Kanalsymmetrie 250 Hz~6300 Hz : ±0,5 dB
Kanaltrennung 1kHz : 70 dB

Frequenzgangregler : +12 dB~−12 dB
(7 Regler, stufenlos verstellbar)
Mittenfrequenzen : 63 Hz, 160 Hz, 400 Hz, 1 kHz,
2,5 kHz, 6,3 kHz, 16 kHz

ALLGEMEINE DATEN

Stromversorgung : Wechselstrom 50 Hz/60 Hz, 220 V
(Für Kontinentaleuropa)
Wechselstrom 50 Hz/60 Hz,
110 V/120 V/220 V/240 V
(Für andere Länder)
Leistungsaufnahme : 18 W
Abmessungen (H×B×T) : 86×430×234 mm
(3$\frac{3}{8}$"×16$\frac{15}{16}$"×9$\frac{7}{32}$")
Gewicht : 2,8 kg (6,2 lb.)

Spezifikationen können infolge von Verbesserungen ohne Ankündigung geändert werden.

CARACTERISTIQUES

(DIN 45 500)

Réponse de fréquence (position centrale) : 5 Hz~100 kHz, −1 dB
Tension de sortie maximale : 8 V (1 kHz, THD 0,01%)
Tension de sortie nominale : 1 V
Distortion harmonique totale : 0,005% (20 Hz~ 20 kHz)
0,003% (1 kHz)
Sensibilité d'entrée : 1 V
Signal/Bruit : 100 dB (110 dB, IHF' A)
Tension d'entrée maximale : 8 V (1 kHz)
Impédance d'entrée : 33 kΩ
Gain : 0±1 dB
Equilibrage de canal 250 Hz~6300 Hz : ±0,5 dB
Séparation de canal 1 kHz : 70 dB

Commandes de niveau de gamme : +12 dB~−12 dB
(7 éléments, continuellement variables)
Fréquences charnières : 63 Hz, 160 Hz, 400 Hz, 1 kHz,
2,5 kHz, 6,3 kHz, 16 kHz

GENERALITES

Alimentation : CA 50 Hz/60 Hz, 220 V
(Pour l'Europe)
CA 50 Hz/60 Hz, 110V/120V/220V/240V
(Autres)
Consommation : 18 W
Dimensions (h×l×pr) mm : 86×430×234 mm
(3-3/8"×16-15/16"×9-7/32")
Poids : 2,8 kg (6,2 lb)

Sujet á changement sans prearis.

ESPECIFICACIONES

(DIN 45 500)

Respuesta de frecuencia (posición central) : 5 Hz~100 kHz, − 1 dB
Tensión de salida máxima : 8 V (1 kHz, THD 0.01%)
Tensión de salida de régimen : 1 V
Distorsión armónica total nominal : 0,005% (20 Hz~20 kHz)
0,003% (1 kHz)
Sensibilidad de entrada : 1 V
Relación de señal ruido : 100 dB (110 dB, IHF' A)
Tensión de entrada máxima : 8 V (1 kHz)
Impedancia de entrada : 33 kΩ
Ganancia : 0±1 dB
Equilibrio de canales 250 Hz~6300 Hz : ±0,5 dB
Separación de canales 1 kHz : 70 dB

Controles de nivel de banda : +12 dB~−12 dB
(7 elementos, continuamente variables)
Frecuencia central : 63 Hz, 160 Hz, 400 Hz, 1 kHz,
2,5 kHz, 6,3 kHz, 16 kHz

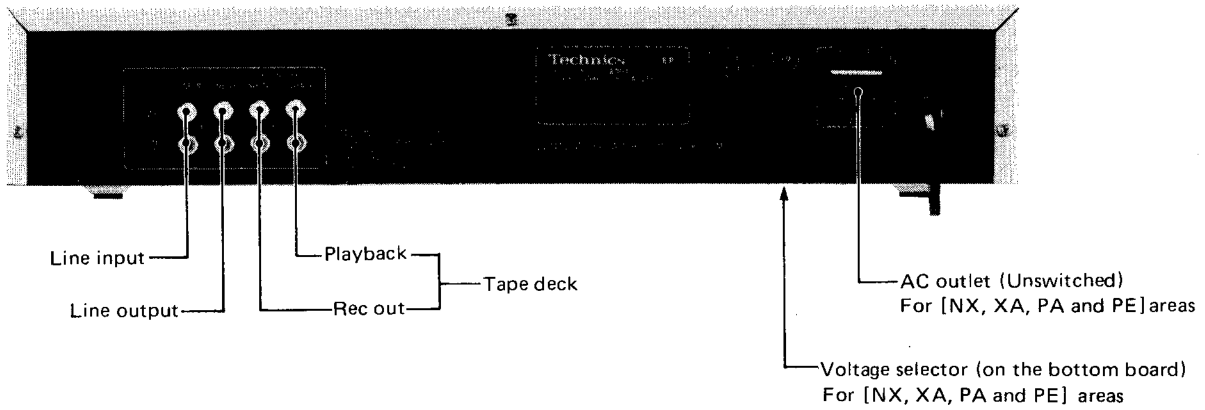
EN GENERAL

Alimentación de corriente : CA 50 Hz/60 Hz, 220 V
(Para Europa continental)
CA 50 Hz/60 Hz, 110V/120V/220V/240V
(Para otros paises)
Consumo de corriente : 18 W
Dimensiones (alto×ancho×prof.) : 86×430×234 mm
(3-3/8"×16-15/16"×9-7/32")
Peso : 2,8 kg (6,2 lb)

Estas especificaciones están sujetas a cualquier cambio sin previo eviso.

LOCATION OF CONTROLS

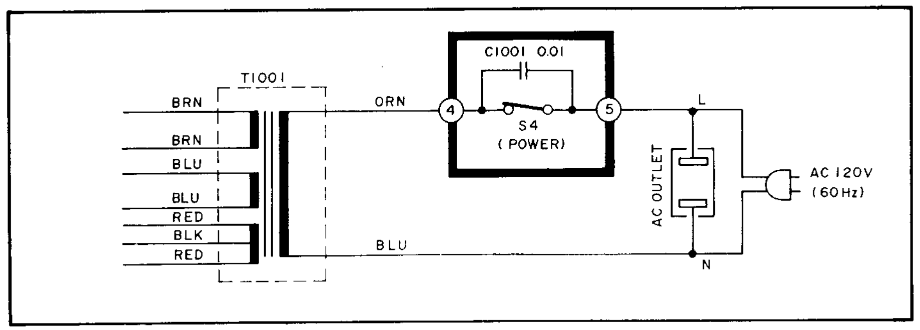
- Rear panel


Technics
Line input
Line output
Playback
Rec out
Tape deck
AC outlet (Unswitched)
For [NX, XA, PA and PE] areas
Voltage selector (on the bottom board)
For [NX, XA, PA and PE] areas

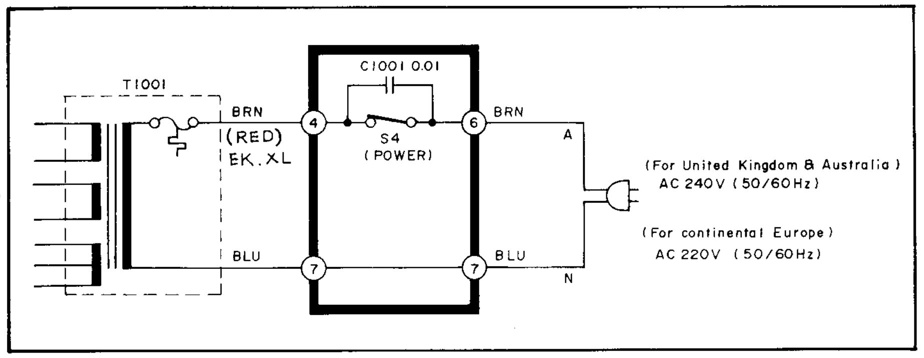
CHANGE IN SCHEMATIC DIAGRAM

- Power source circuit

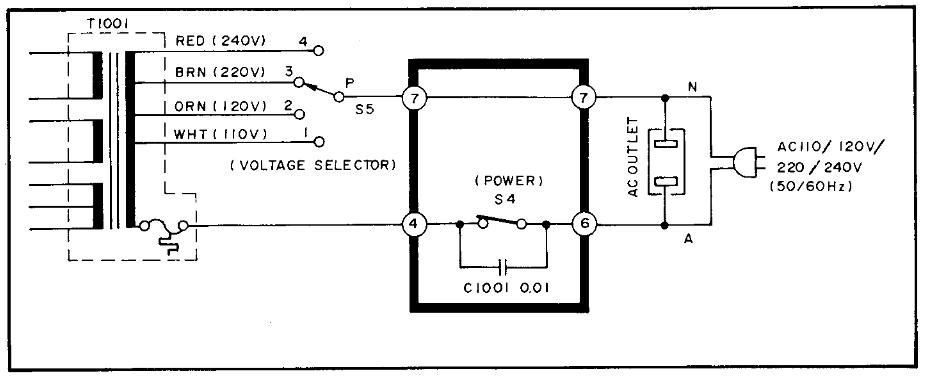
For the U.S.A. [M]


T1001
BRN
BRN
BLU
BLU
RED
BLK
RED
ORN
BLU
C1001 0.01
S4
(POWER)
4
5
L
N
AC OUTLET
AC 120V
(60Hz)

For continantal Europe, United Kingdom [EK] and Australia [XL].


T1001
BRN
(RED)
EK, XL
BLU
C1001 0.01
S4
(POWER)
4
6
7
7
BRN
BLU
A
N
(For United Kingdom & Australia)
AC 240V (50/60Hz)
(For continental Europe)
AC 220V (50/60Hz)

For other areas [XA, PA, PE & NX]


T1001
RED (240V) 4
BRN (220V) 3
ORN (120V) 2
WHT (110V) 1
P
S5
(VOLTAGE SELECTOR)
7
7
4
6
(POWER)
S4
C1001 0.01
N
A
AC OUTLET
AC110/ 120V/
220 / 240V
(50/60Hz)

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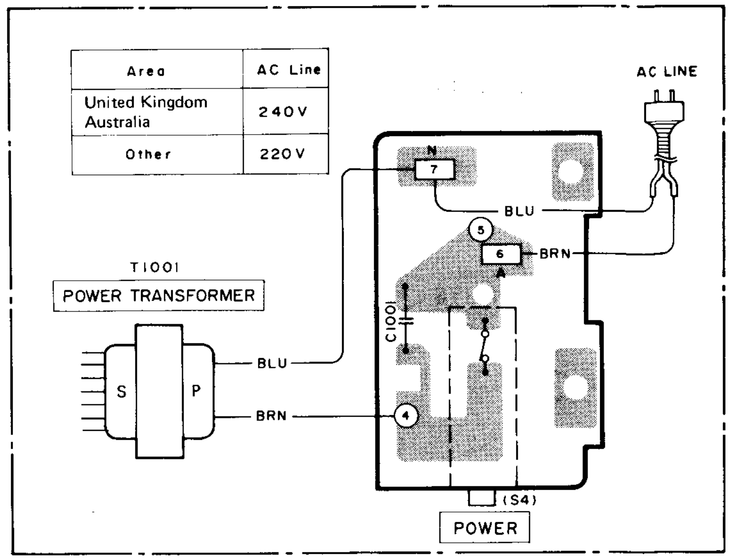
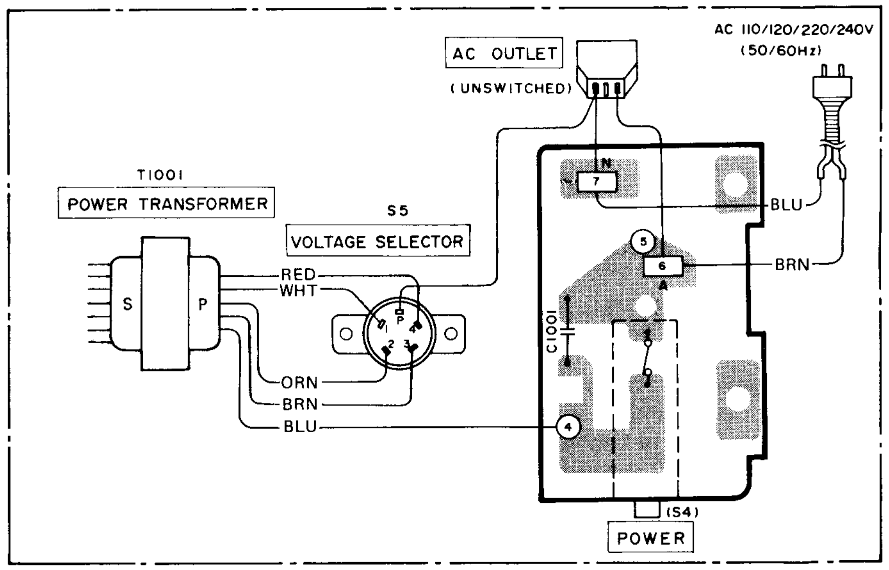
PRINTED CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

- Power source circuit

For continantal Europe, United Kingdom [EK] and Australi [XL]


Area
AC Line
United Kingdom
Australia
240V
Other
220V
AC LINE
N
7
BLU
5
6
BRN
A
T1001
POWER TRANSFORMER
S
P
BLU
BRN
4
C1001
(S4)
POWER

For other areas [XA, PA, PE & NX]


AC OUTLET
(UNSWITCHED)
AC 110/120/220/240V
(50/60Hz)
T1001
POWER TRANSFORMER
S5
VOLTAGE SELECTOR
S
P
RED
WHT
ORN
BRN
BLU
N
7
BLU
5
6
BRN
A
4
C1001
(S4)
POWER

CHANGE IN REPLACEMENT PARTS LIST

Note: 1. Mentioned in this parts list are only those changed in Model No. SH-8044 for destination[M] area.
2. Ⓚ – marked parts are used for black only, while ○ – marked parts are for silver type only.
3. Part other than Ⓚ – and ○ – marked are used for both black and silver type.
4. Bracketed indications in Ref. No. Columns specify the area. Parts without these indications can be used for all areas.

Ref. No.	Change of Part No.		Description		
	SH-8044 [M] ➡	SH-8044 Europe, Other	Color	Area	
SWITCH					
S5	Addition	ESE3787		[NX, XA, PA & PE] only	Voltage Selector
TRANSFORMER					
T1001	SLTK5J24–W	SLTK5J25–W		[NX, XA, PA & PE]	Power Transformer
		SLTK5J27–W		[XL & EK]	
		SLTK5J26–W		[Other] area	
RESISTORS					
R73 ~ R76	Addition	ERD10TJ102		[EGA] only	1kΩ, 1/8W, Carbon

Ref. No.	Change of Part No. SH-8044 [M]	Color	➡ SH-8044 Europe, Other	Color	Area	Description
CAPACITORS						
C67 ~ C70	Addition		ECCD1H151K		[EGA] only	150pF, 50V, Ceramic
C71, 72	Addition		ECKD1H331KB		[EGA] only	330pF, 50V, Ceramic
C73, 74	Addition		ECKD1H223ZF		[EGA] only	0.022μF, 50V, Ceramic
CABINET and CHASSIS PARTS						
5	SBWK22	○	SBWK22			Button, Volume (Use for both black and silver types)
	SBWK23	Ⓚ				
6	SGXK94		SGXK93			Cloth, Light Shielding
7	SGXK91−2	○	SGXK91−1	○		Sub Panel
	SGXK91	Ⓚ	SGXK91	Ⓚ		
16	RHR111		SHR129		[EK] only	Bushing, AC Cord
			SHR127		[Other] area	
17	SJS9221−1		SJS9221−1		[NX, XA,PA &PE] only	Socket, AC Outlet
			Deletion		[Other]	
18	RJA9YA		QFC1205M		[EK]	AC Cord, Power Source
			QFC1208M		[XL]	
			RJA52YA		[PA, PE]	
			SJA138−3		[Other]	
20	SGPKH8044M		SGPKH8044X		[NX, XA, PA & PE]	Rear Panel, (w/Feet)
			SGPKH8044E		[E]	
			SGPKH8044K		[EK]	
			SGPKH8044L		[XL]	
			SGPKH8044G		[Other]	
SCREW						
N13	Addition		XTB3+8BFN		[NX, XA,PA &PE] only	Voltage Selector M'tg.
ACCESSORIES						
A2	SQFK10071		SQFK10074		[EGA]	Instruction Book
			SQFK10075		[Ei]	
			SQFK10076		[PA, PE]	
			SQFK10073		[Other]	
A3	Addition		SJP9215		[PA, PE] only	Plug Adaptor, AC (U→B), (U→C)
A4	Addition		SJP5213−1		[XA, NX] only	Plug Adaptor, AC (C→U)
PACKING PARTS						
P1	SPGK137		SPGK138	○	[EK] only	Carton Box, Silver Type
			SPGK137	○	[Other] area	
P1	SPGK140		SPGK142	Ⓚ	[EK]	Carton Box, Black Type
			SPGK139	Ⓚ	[EF]	
			SPGK140	Ⓚ	[Other] area	

REPLACEMENT PARTS LIST

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. Ⓚ −marked parts are used for black only, while ○ −marked parts are for silver type only.
4. Part other than Ⓚ − and ○−marked are used for both black and silver type.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
6. The "Ⓢ"mark is service standard parts and may differ from production parts.
7. The parenthesized numbers in the column of description stand for the quantity per set.

Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC1,2,502~506	SVITA75559S	Control Amp., Buffer & Spectrum Analyzer B.P.F.
IC501	AN78N12	12V Regulator
IC507	M54832AP	Channel Selector
IC508	SVIHA12010	FL Driver
TRANSISTORS		
Q1	2SD1406−Y	Regulator
Q2	2SB1015−Y	Regulator
Q3	2SC1815−G	Muting
Q4,509,511~518	2SA1015Y	Muting, Buffer & Inverter
Q5,6,510	2SC2878A−T	Muting
Q501~508	2SA1246T−A	Sampling Gate
Q519~530	UN4115	Buffer
DIODES		
D1,2	MA4150H	15V Zener
D3 ⚠	SVD1B4B42	Rectifier

Ref. No.	Part No.	Part Name & Description
DIODES		
D5	MA167	Rectifier
D6~9,501~508 513	SVD1SS119−04	Switching & Detector
D101~114	LN251RCPP	LED, Volume
D509,510 ⚠	SVD1SR35200	Rectifier
D511 Ⓢ	20A90	Bias
D512	MA4120H	12V Zener
D514	LN81CPH	LED, Power
VARIABLE RESISTORS		
VR1~14	EVAJN3J15G25	Band Level Control, 200kΩ(G)
FLUORESCENT DISPLAY TUBE		
FL	SADBG239ZK	Display
COMPONENT COMBINATIONS		
Z1	RGSD7X104K	100kΩ(× 7)
Z2	RGSD8X104K	100kΩ(×8)
Z3	PJB7XC331M	330pF(×7)

Ref. No.	Part No.	Part Name & Description
COMPONENT COMBINATIONS		
Z4	RGSD8X472X	4.7kΩ(×8)
Z5	RGHD12X562K	1/4W, 5.6kΩ(×12)
SWITCHES		
S1,2	SSHK47	Rec mode, Tape Monitor
S3	SSHK46	Equalization
S4 ⚠	SSH1071	Power source
S5〔NX,XA,PA, PE〕 ⚠	ESE3787	Voltage Selector
TRANSFORMER		
T1001〔NX,XA, PA,PE〕 ⚠	SLTK5J25−W	Power Transformer
T1001〔XL,EK〕 ⚠	SLTK5J27−W	Power Transformer
T1001〔other〕 ⚠	SLTK5J26−W	Power Transformer

Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS		
1 ○	SGU419−3	Transparent Plate (1)
1 Ⓚ	SGU419−1	Transparent Plate (1)
2	SGXK92	Grille (1)
3	SDUK11	Filter (1)
4	SDUK12	Sheet, Front Panel (1)
5	SBWK22	Button (14)
6	SGXK93	Cloth, Shielding (1)
7 ○	SGXK91−1	Sub Panel (1)
7 Ⓚ	SGXK91	Sub Panel (1)
8 ○	SGWK280SA	Front Panel (1)
8 Ⓚ	SGWK280BA	Front Panel (1)
9	SHR9728	Holder, FL (2)
10	SBC666	Button, Power SW (1)
11	SUB81	Rod, Connection Power SW (1)
12	SBC315−4T	Button (3)
13	SBZK33	Guide, Light (14)
14 ○	SKCK130S	Cabinet (1)
14 Ⓚ	SKCK130BB	Cabinet (1)
15	SMNK17	Cover, Power SW (1)
16〔EK〕	SHR129	Bushing, AC Cord (1)
16〔other〕	SHR127	Bushing, AC Cord (1)
17〔NX,XA,PA, PE〕 ⚠	SJS9221−1	Socket, AC Outlet (1)
18〔EK〕 ⚠	QFC1205M	AC Cord, Power Source (1)
18〔XL〕 ⚠	QFC1208M	AC Cord, Power Source (1)

Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS		
18〔PA,PE〕 ⚠	RJA52YA	AC Cord, Power Source (1)
18〔other〕 ⚠	SJA138−3	AC Cord, Power Source (1)
19	SJF3055−1N	Terminal Board, In/Out (1)
20〔NX,XA,PA, PE〕	SGPKH8044X	Rear Panel, (W/Feet) (1)
20〔E〕	SGPKH8044E	Rear Panel, (W/Feet) (1)
20〔EK〕	SGPKH8044K	Rear Panel, (W/Feet) (1)
20〔XL〕	SGPKH8044L	Rear Panel, (W/Feet) (1)
20〔other〕	SGPKH8044G	Rear Panel, (W/Feet) (1)
〔20−1	〔SHS2481	Foot (4)
21	SJT783	Terminal (14)
22	SJS5811	Socket (2)
23	SJT3809	Connector (2)
24	SJT5807	Connector (1)
25	SJT3319	Connector, J7 (1)
25	SJT3415	Connector, J8 (1)
25	SJT3511	Connector, J3 (1)
25	SJT3611	Connector, J11,12 (1)
25	SJT3709	Connector, J1,2,10 (3)
25	SJT3809	Connector,J9 (1)
26	SJS5339	Socket, J7 (1)
26	SJS5433	Socket, J8 (1)
26	SJS5531	Socket, J3 (1)
26	SJS5635	Socket, J11,12 (2)
26	SJS5719	Socket, J1,2,10 (3)
SCREWS and WASHERS		
N1 Ⓢ	XTB3+8BFZ	Tapping, ⊕3×8 (3)
N2 ○	SNE2095−4	Cabinet (2)
N2 Ⓚ	SNE2095−5	Cabinet (2)

Ref. No.	Part No.	Part Name & Description
SCREWS and WASHERS		
N3 ○ Ⓢ	XTB3+8BFN	Tapping, ⊕3×8 (3)
N3 Ⓚ Ⓢ	XTB3+8BFZ	Tapping, ⊕3×8 (3)
N4 Ⓢ	XTB3+8BFN	Tapping, ⊕3×8 (2)
N5 Ⓢ	XTB3+6BFN	Tapping, ⊕3×6 (2)
N6	XTBS3+8CFYR1	Tapping, ⊕3× 8(W/Detent) (2)
N7 Ⓢ	XSN3+8S	Screw, ⊕3×8 (1)
N7−1 Ⓢ	XWA3B	Washer, Spring ϕ3 (1)
N7−2 Ⓢ	XWG3	Washer, ϕ3 (1)
N8 Ⓢ	XTN3+6B	Tapping, ⊕3×6 (2)
N8−1 Ⓢ	XWG3	Washer, ϕ3 (2)
N9 Ⓢ	XTB3+10BFZ	Tapping, ⊕3×10(2)
N10 Ⓢ	XWC3B	Stop Ring (2)
N11	XTB3+8BFYR	Tapping, ⊕3×8 (3)
N12 Ⓢ	XTB3+8BFYR	Tapping, ⊕3×8 (3)
N13 Ⓢ	XTB3+8BFN	Tapping, ⊕3×8 (2)
ACCESSORIES		
A1	SJPK2201	Cord, Pin-Pin (2)
A2〔EGA〕	SQFK10074	Instruction Book (1)
A2〔EI〕	SQFK10075	Instruction Book (1)
A2〔PA,PE〕	SQFK10076	Instruction Book (1)
A2〔other〕	SQFK10073	Instruction Book (1)
A3〔PA,PE〕	SJP9215	Plug Adaptor (1)
A4〔XA,NX〕	SJP5213−1	Plug Adaptor (1)
PACKING PARTS		
P1〔EK〕 ○	SPGK138	Carton Box (1)
P1〔other〕 ○	SPGK137	Carton Box (1)
P1〔EK〕 Ⓚ	SPGK142	Carton Box (1)
P1〔EF〕 Ⓚ	SPGK139	Carton Box (1)
P1〔other〕 Ⓚ	SPGK140	Carton Box (1)
P2	SPSK69	Pad, Front (1)
P3	SPSK70	Pad, Rear (1)
P4	SPSK74	Pad, Upper (1)
P5 ○	SPP719	Polyethylene Sheet (1)
P5 Ⓚ	SPP659	Polyethylene Sheet (1)

Printed in Japan
8407[illegible]9480 Ⓚ KK/IM

ORDER NO. HAD84072836C1

Service Manual

Equalizer
SH-8044

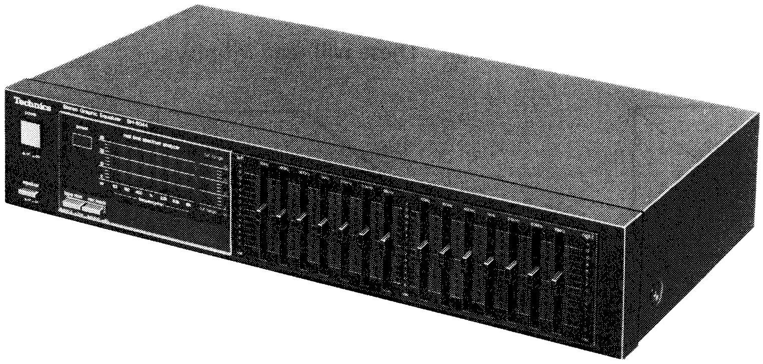
Stereo Graphic Equalizer
(With Spectrum Analyzer)

Color

(S) ···· Silver Type	
(K) ···· Black Type	

Color	Area
(S),(K)	[M] ···· U.S.A.
(K)	[MC] ··· Canada

- **System (U.S.A.)**
  SC-7170E



SPECIFICATIONS

(IHF '78)

Center Frequency:	63Hz, 160Hz, 400Hz, 1kHz, 2.5kHz, 6.3kHz and 16kHz
Frequency Response: (center position)	5Hz ~ 100kHz (−1dB)
Band Level Controls:	+12dB ~ −12dB (7 continuously variable elements per channel)
Rated Total Harmonic Distortion:	0.005% (20Hz ~ 20kHz) 0.003% (1kHz)
Input Impedance:	33k ohms
Rated Output Voltage:	1V
Maximum Output Voltage:	8V (1kHz, THD 0.01%)
Input Sensitivity:	1V
Signal to Noise Ratio:	110dB (IHF'A)
Maximum Input Voltage:	8V (1kHz)
Gain:	0 ± 1dB

■ General

Power Supply:	120V AC, 60Hz
Power Consumption:	20 W
Weight:	6.2 lb (2.8 kg)
Dimensions:	Width; 16-15/16" (430mm) Height; 3-3/8" (86mm) Depth; 9-7/32" (234mm)

Specifications are subject to change without notice for further improvement.
Weights and dimensions shown are approximate.

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Technics

Matsushita Engineering and Service Company
50 Meadowland Parkway,
Secaucus. New Jersey 07094

Panasonic Hawaii Inc.
91-238 Kauhi St. Ewa Beach
P.O. Box 774
Honolulu, Hawaii 96808-0774

Matsushita Electric of Canada Limited
5770 Ambler Drive, Mississauga,
Ontario, L4W 2T3

Panasonic Sales Company, Division of Matsushita Electric of Puerto Rico, Inc.
Ave, 65 De Infanteria, KM 9.7
Victoria Industrial Park
Carolina, Puerto Rico 00630

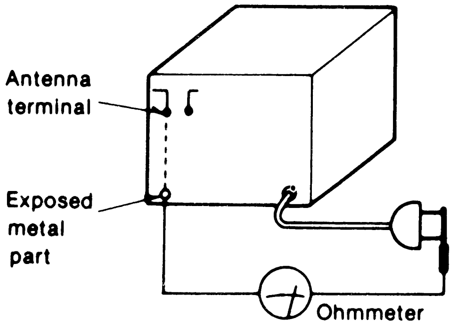
SAFETY PRECAUTION

1. Before servicing, unplug the power cord to prevent an electric shock.
2. When replacing parts, use only manufacturer's recommended components for safety.
3. Check the condition of the power cord. Replace if wear or damage is evident.
4. After servicing, be sure to restore the lead dress, insulation barriers, insulation papers, shields, etc.
5. Before returning the serviced equipment to the customer, be sure to make the following insulation resistance test to prevent the customer from being exposed to a shock hazard.

• INSULATION RESISTANCE TEST

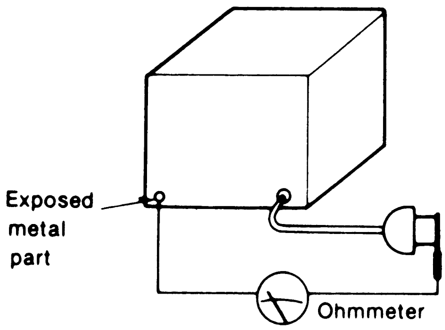
1. Unplug the power cord and short the two prongs of the plug with a jumper wire.
2. Turn on the power switch.
3. Measure the resistance value with ohmmeter between the jumpered AC plug and each exposed metal cabinet part, such as screwheads antenna, control shafts, handle brackets, etc. Equipment with antenna terminals should read between 3MΩ and 5.2MΩ to all exposed parts. (Fig. A) Equipment without antenna terminals should read approximately infinity to all exposed parts. (Fig. B)

Note: Some exposed parts may be isolated from the chassis by design. These will read infinity.



(Fig. A)

Resistance = 3MΩ—5.2MΩ



(Fig. B)

Resistance = Approx ∞

4. If the measurement is outside the specified limits, there is a possibility of a shock hazard. The equipment should be repaired and rechecked before it is returned to the customer.

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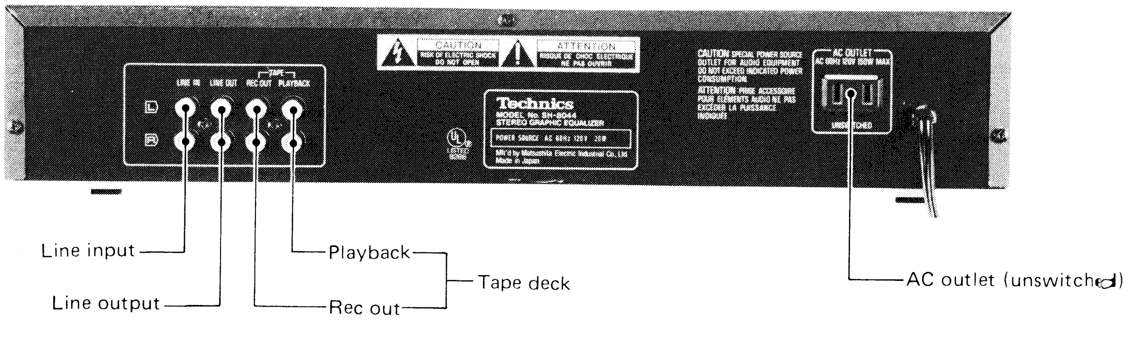
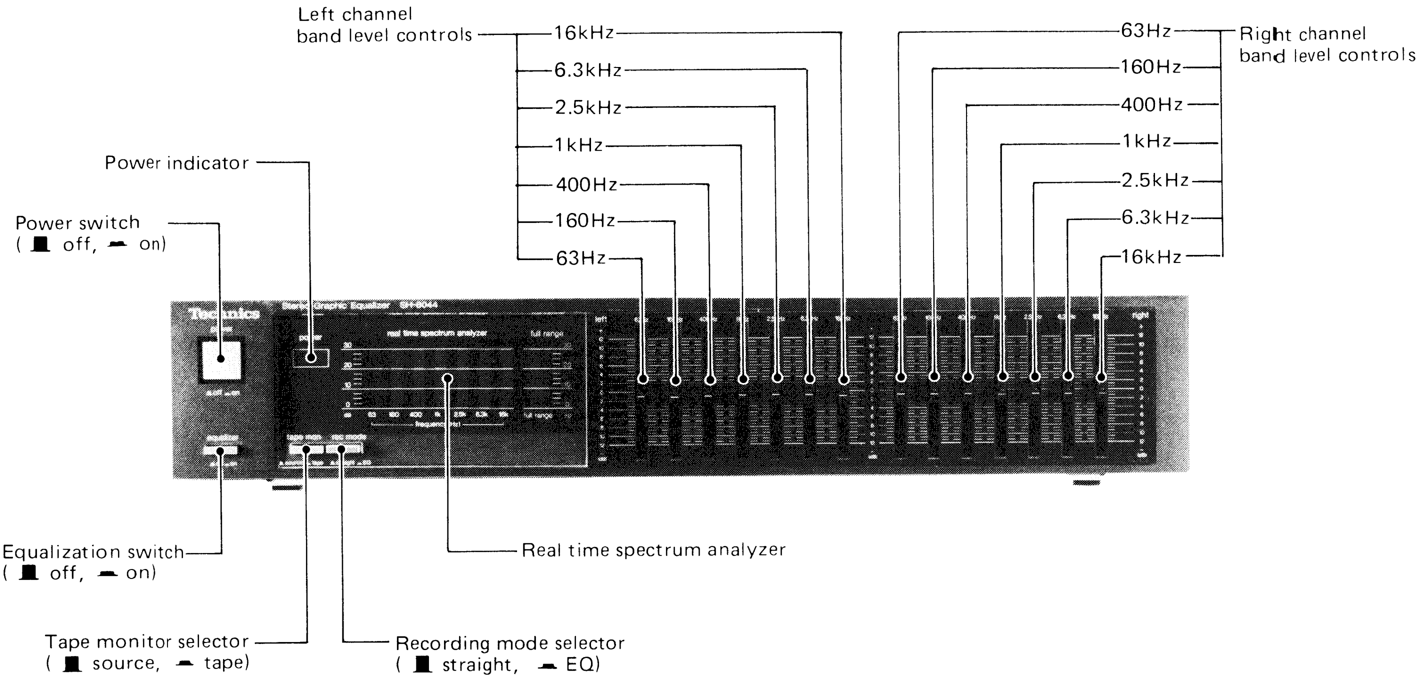
LOCATION OF CONTROLS

- Rear panel



• Front panel


Left channel band level controls
16kHz
6.3kHz
2.5kHz
1kHz
400Hz
160Hz
63Hz
63Hz
160Hz
400Hz
1kHz
2.5kHz
6.3kHz
16kHz
Right channel band level controls
Power indicator
Power switch (■ off, ▬ on)
Equalization switch (■ off, ▬ on)
Real time spectrum analyzer
Tape monitor selector (■ source, ▬ tape)
Recording mode selector (■ straight, ▬ EQ)

• Power switch
This switch is used to turn the power on and off.

• Power indicator
This indicator will illuminate when the power switch is turned on.

• Real time spectrum analyzer
- •The same 7-band frequency divider as for the band level controls allows the levels of the frequency components of voices, music, etc., to be visually displayed.
- •The "full range" area on the right side displays the combined level of all of the frequency bands.

(The indication is the combined value of the left and right input signals.)

• Band-level controls
These controls are used to adjust the 7 frequency levels. When these levers are moved in the "+ dB" direction, peak frequency characteristics are obtained. When they are moved in the "− dB" direction, dip frequency characteristics are obtained. These characteristics can be adjusted a maximum of ±12 dB.

• Equalization switch
This switch is used to turn the equalization circuitry on and off.

on (■ ⇒ ▬):
Set to this position for equalizer correction.

off (▬ ⇒ ■):
Set to this position to turn off equalizer correction. By turning this switch on and off, the equalizer effect can also be checked. When this switch is in the "off" position, signals will still pass through the unit and be emitted, regardless of whether the power switch is in the "on" or "off" position.

• Tape-monitor selector

source (▬ ⇒ ■):
Set to this position to listen to the radio or a disc.

tape (■ ⇒ ▬):
Set to this position to listen to a tape deck.

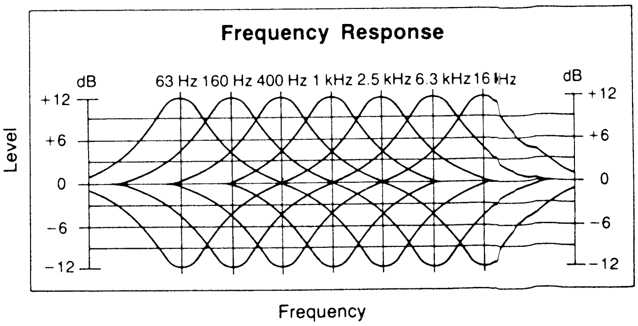
• Recording mode selector

straight (▬ ⇒ ■):
Set to this position to record without equalizer correction.

EQ (■ ⇒ ▬):
Set to this position to make a tpae recording of a radio broadcast or a disc while controlling the frequency response.

Note:
The equalization switch must be set to the "on" position and then the tape-monitor selector must be set to the "source" position, otherwise the frequency response cannot be controlled.

• Total frequency response



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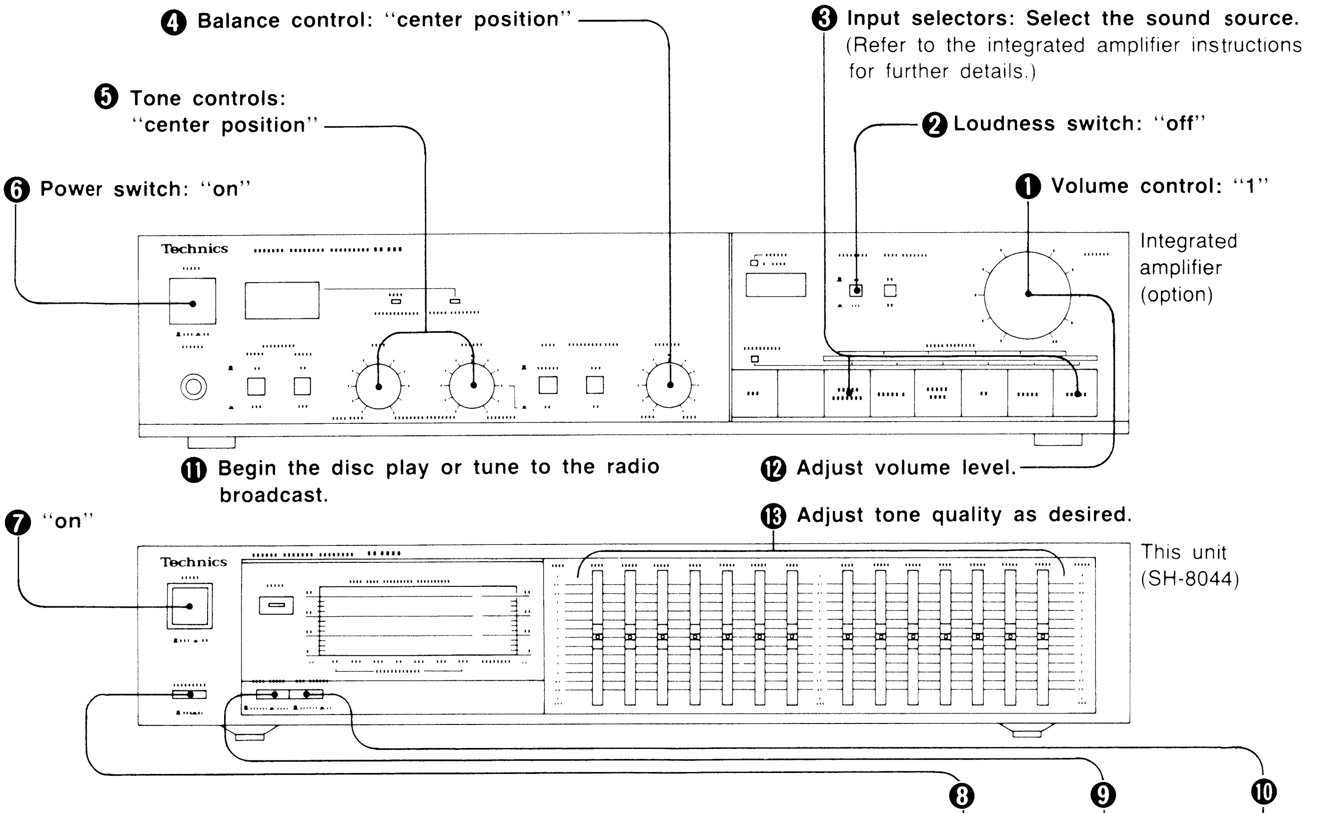
OPERATION

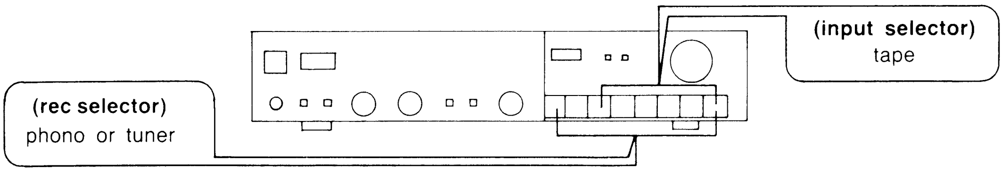
- Connection of the input/output terminals (LINE OUT/LINE IN) of this unit to the external input/output terminals (EXT OUT/EXT IN) terminals of an integrated amplifier.


❹ Balance control: "center position"
❸ Input selectors: Select the sound source. (Refer to the integrated amplifier instructions for further details.)
❺ Tone controls: "center position"
❷ Loudness switch: "off"
❻ Power switch: "on"
❶ Volume control: "1"
Technics
Integrated amplifier (option)
⓫ Begin the disc play or tune to the radio broadcast.
⓬ Adjust volume level.
❼ "on"
⓭ Adjust tone quality as desired.
Technics
This unit (SH-8044)
❽
❾
❿

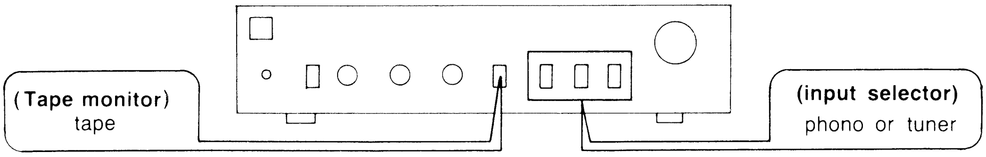
	equalizer	tape mon	rec mode
To listen to corrected sound of phono discs or radio.	"on" (■⇨▬)	"source" (▬⇨■)	Set to any position
To record corrected sound of phono discs or from radio.			"EQ" (■⇨▬)
To record the uncorrected sound of phono discs or from the radio.			"straight" (▬⇨■)
To listen to corrected sound from a tape deck.		"tape" (■⇨▬)	Set to any position
Press the equalization switch (equalizer) in to the "off" (▬⇨■) position to listen to uncorrected sound, or when recording.			

- Connection of the input/output (LINE OUT/LINE IN) terminals of this unit to the tape input/output terminals (PLAYBACK/REC OUT) of an amplifier (amplifier operation changes from that shown in the figure above to that described below).

- If the amplifier has a recording mode selector and an input selector. (Make setting as shown in the figure.)


(input selector)
tape
(rec selector)
phono or tuner

- If the amplifier has a tape-monitor selector and an input selector: (Make setting as shown in the figure.)


(Tape monitor)
tape
(input selector)
phono or tuner

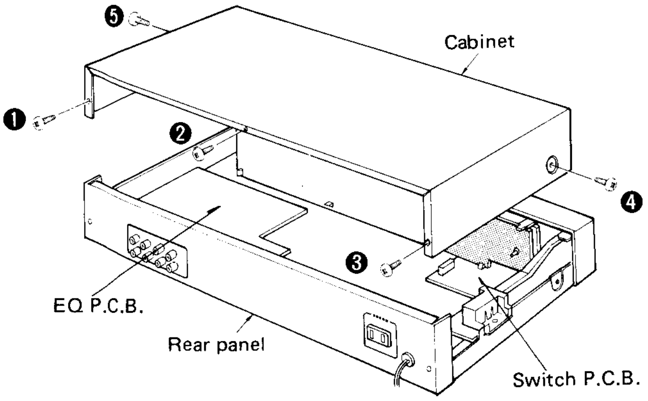
DISASSEMBLY INSTRUCTIONS

Ref. No. 1

How to remove the cabinet.

Procedure 1

- Remove the 5 screws. (❶ ~ ❺)



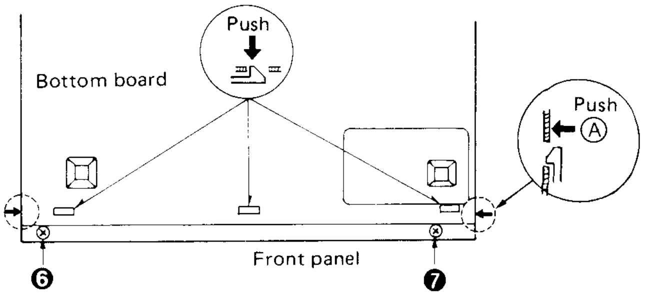
❺
Cabinet
❶
❷
❹
❸
EQ P.C.B.
Rear panel
Switch P.C.B.

Ref. No. 2

How to remove the front panel.

Procedure 1 → 2

- Pull out the 4 connectors (J1 ~ J3 and J8) from EQ P.C.B.
- Pull out the 2 connectors (J7 and J12) from switch P.C.B.
- Remove the 2 screws. (❻ ~ ❼)
- Push the 2 tabs on the right and left sides of the front panel in the direction of arrow Ⓐ .
- The tabs which project (at positions) from the front panel are engaged with the bottom board.
- Remove the front panel from chassis.



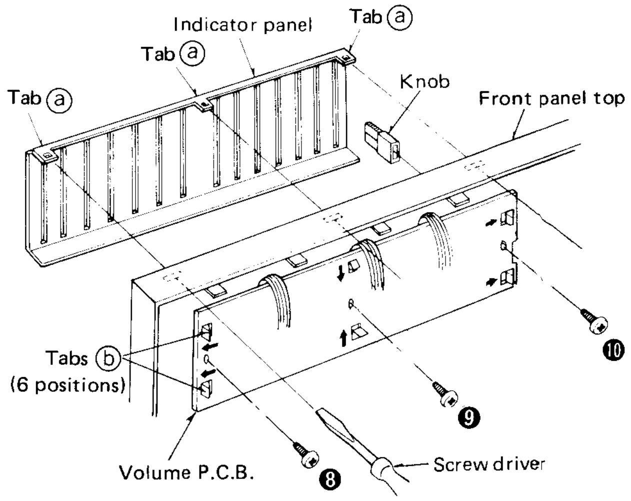
Push
Bottom board
Push
Ⓐ
Front panel
❻
❼

Ref. No. 3

How to remove the band level control volume P.C.B.

Procedure 1 → 2 → 3

- Move the 3 tabs in. (ⓐ).
- Remove the indicator panel.
- Remove the 14 knobs.
- Remove the 3 screws. (❽ ~ ❿)
- Move the 6 tabs to the side (ⓑ).
- Remove the P.C.B.



Indicator panel
Tab ⓐ
Tab ⓐ
Tab ⓐ
Knob
Front panel top
Tabs ⓑ
(6 positions)
❿
❾
Volume P.C.B.
❽
Screw driver

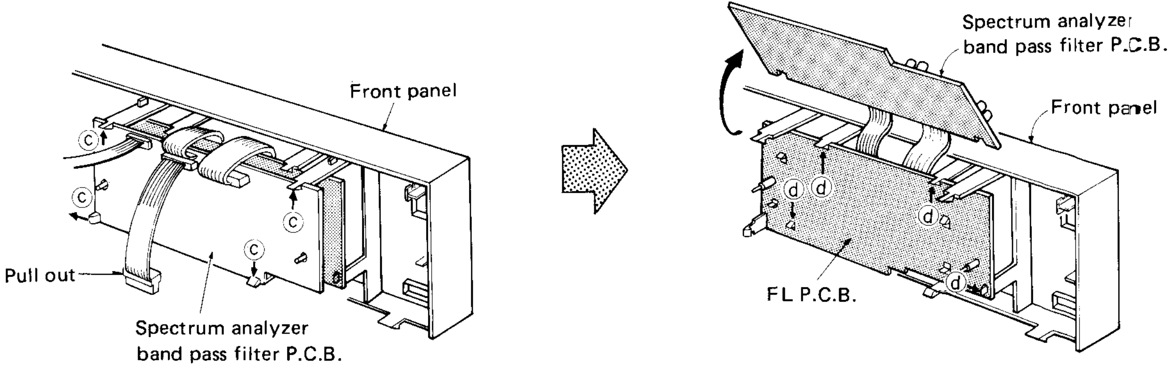
Ref. No. 4

How to remove the FL (display tube) P.C.B.

Procedure 1 → 2 → 4

- Move the 4 tabs aside (ⓒ).
- Remove the band pass filter P.C.B.

- Move the 4 tabs aside (ⓓ).
- Remove the FL P.C.B.



Front panel
ⓒ
ⓒ
ⓒ
ⓒ
Pull out
Spectrum analyzer band pass filter P.C.B.
Spectrum analyzer band pass filter P.C.B.
Front panel
ⓓ
ⓓ
ⓓ
ⓓ
FL P.C.B.

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TECHNICAL INFORMATION

• Band level control circuit

(for varying the center frequency by ± 12dB)

The euqalizer circuit of this unit is shown in Fig. 1. When the control volume (VR) is turned in the direction of → (+), NF level lowers with the connection shown in Fig. 2, causing the gain of operation amplifier to increase, then the "peak" apperas. Contrarily, when VR is turned in the direction of ← (−), the input impedance of operation amplifier becomes lowered with the connection shown in Fig. 3. Then the frequency level is "dip".

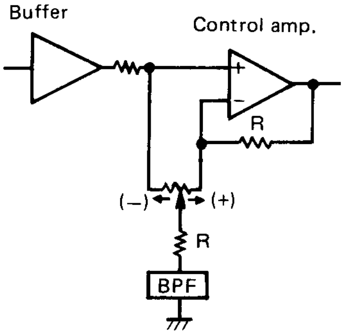

Buffer
Control amp.
+
−
R
(−)
(+)
R
BPF

Fig. 1

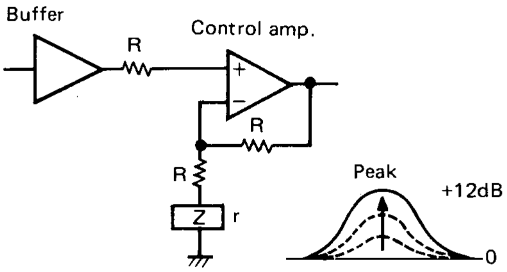

Buffer
R
Control amp.
+
−
R
R
Z
r
Peak
+12dB
0

Fig. 2

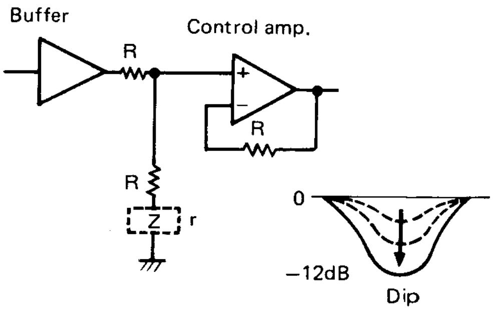
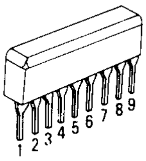
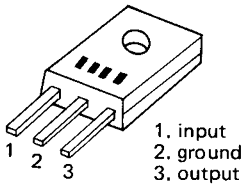
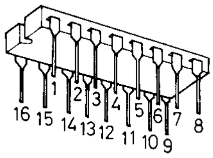
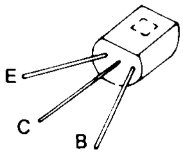
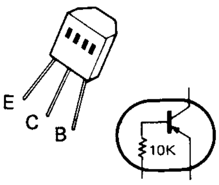
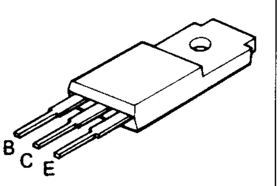
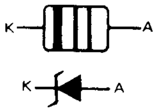
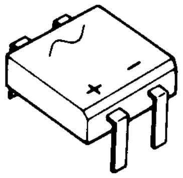
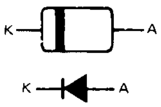
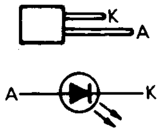
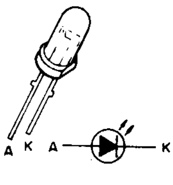
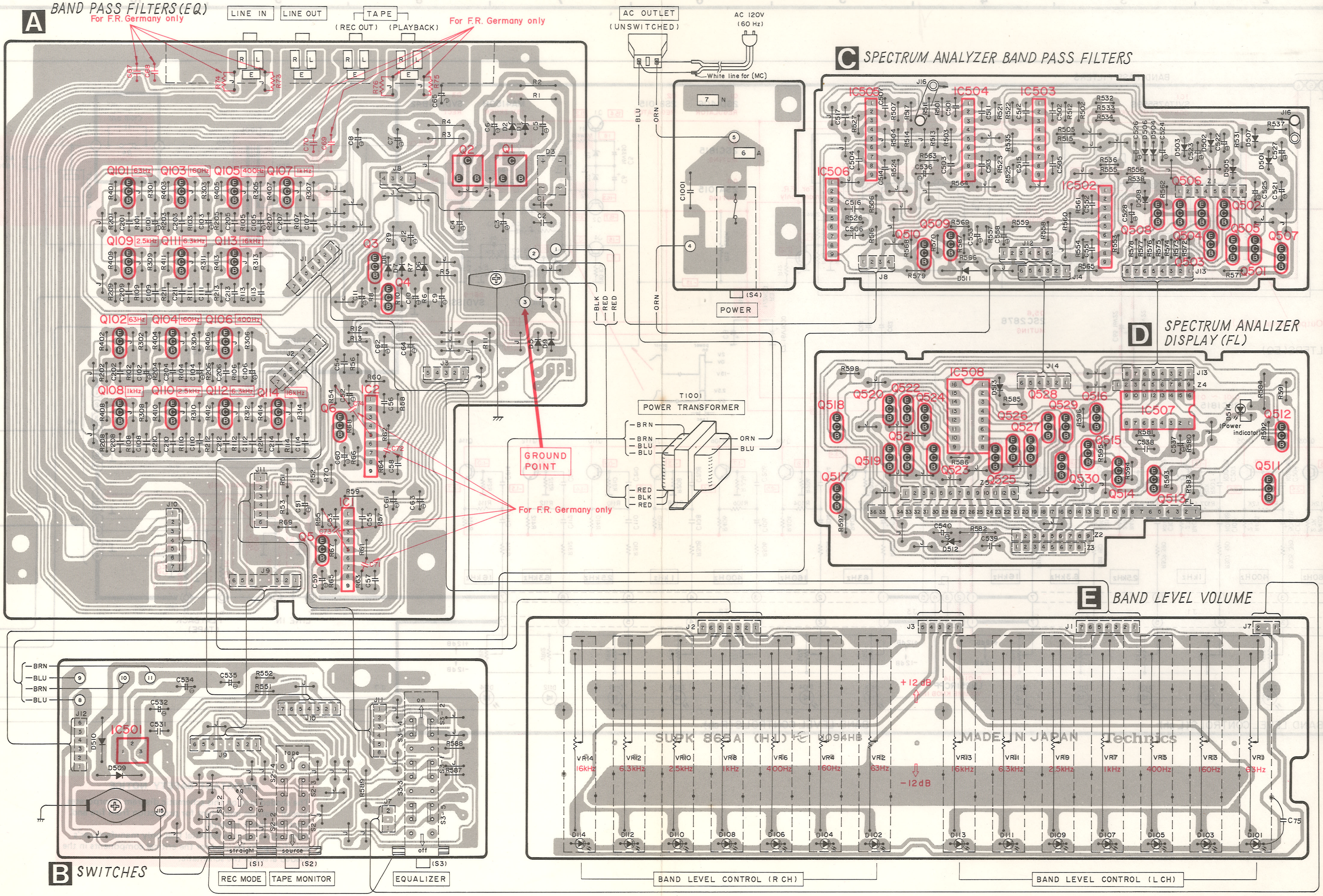

Buffer
R
Control amp.
+
−
R
R
Z
r
0
−12dB
Dip

Fig. 3

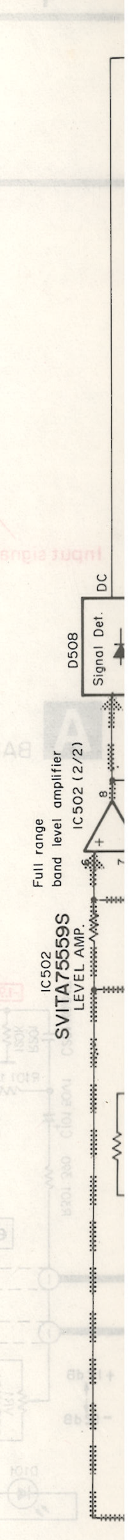
TERMINAL GUIDE OF TRANSISTORS, DIODES AND IC'S

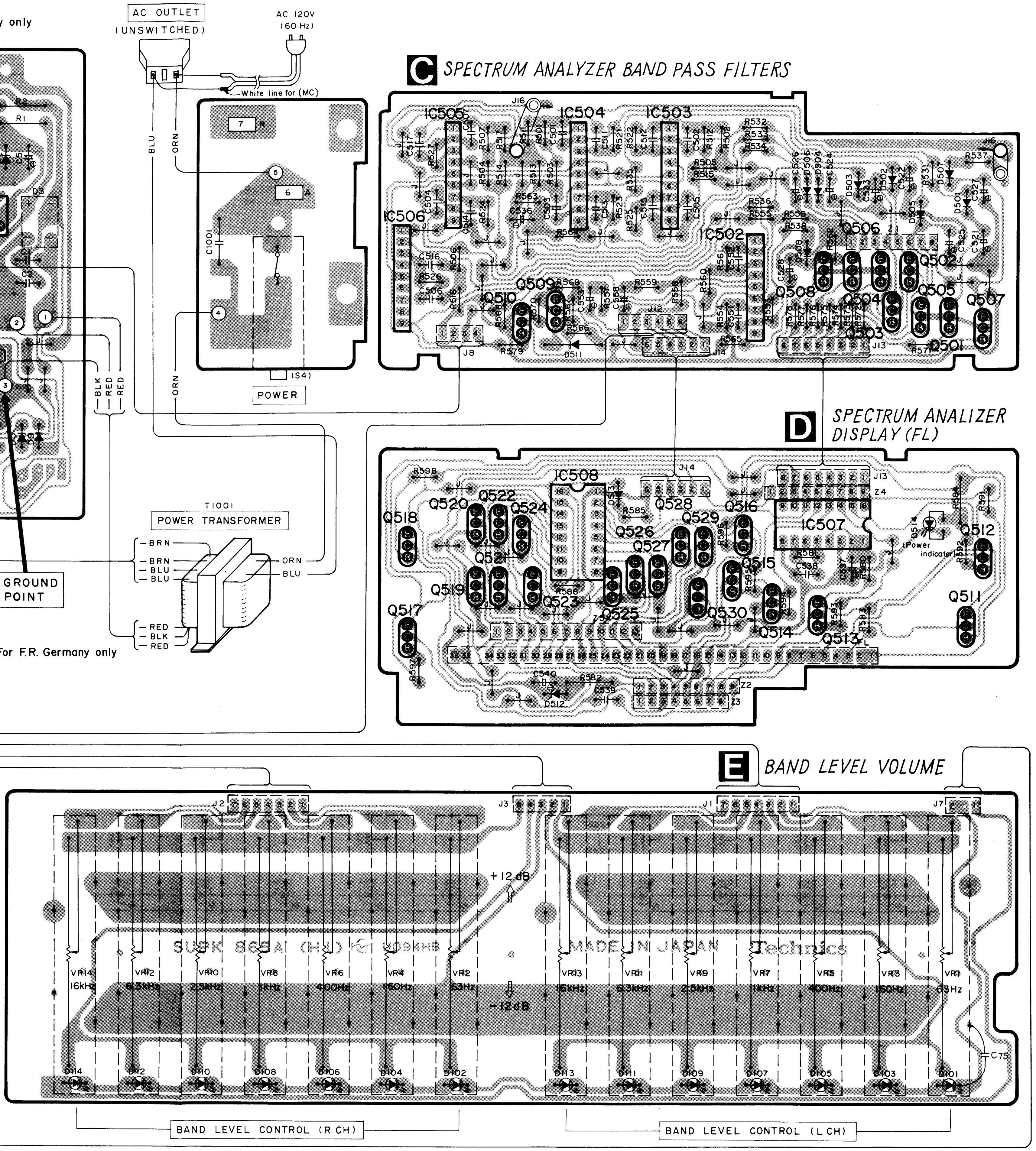
SVITA75559S  	AN78N12  1 2 3 1. input 2. ground 3. output	M54832AP SVIHA12010  1 2 3 4 5 6 7 8 16 15 14 13 12 11 10 9	2SA1015, 2SC2878, 2SC1815, 2SA1246 
UN4115  	2SD1406, 2SB1015  	MA4150, MA4120  	SVD1B4B42 
MA167, SVD1SS119–04 SVD1SR35200  	LN251RCP  	LN81CPH  	

■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM


A BAND PASS FILTERS (EQ)
For F.R. Germany only
LINE IN
LINE OUT
TAPE
(REC OUT) (PLAYBACK)
AC OUTLET
(UNSWITCHED)
AC 120V
(60 Hz)
White line for (MC)
C SPECTRUM ANALYZER BAND PASS FILTERS
Q101 63Hz
Q103 160Hz
Q105 400Hz
Q107 1kHz
Q109 2.5kHz
Q111 6.3kHz
Q113 16kHz
Q102 63Hz
Q104 160Hz
Q106 400Hz
Q108 1kHz
Q110 2.5kHz
Q112 6.3kHz
Q114 16kHz
IC505
IC504
IC503
IC506
IC502
POWER
(S4)
D SPECTRUM ANALIZER DISPLAY (FL)
IC508
IC507
Power indicator
GROUND POINT
POWER TRANSFORMER
T1001
BRN
BLU
RED
BLK
ORN
E BAND LEVEL VOLUME
+12 dB
-12dB
VR14 16kHz
VR12 6.3kHz
VR10 2.5kHz
VR8 1kHz
VR6 400Hz
VR4 160Hz
VR2 63Hz
VR13 16kHz
VR11 6.3kHz
VR9 2.5kHz
VR7 1kHz
VR5 400Hz
VR3 160Hz
VR1 63Hz
MADE IN JAPAN
Technics
BAND LEVEL CONTROL (R CH)
BAND LEVEL CONTROL (L CH)
B SWITCHES
IC501
REC MODE
TAPE MONITOR
EQUALIZER
(S1)
(S2)
(S3)
straight
source
off

■ BLOCK


D508
Signal Det
Full range band level amplifier
IC502 (2/2)
SVITA7555S
LEVEL AMP.

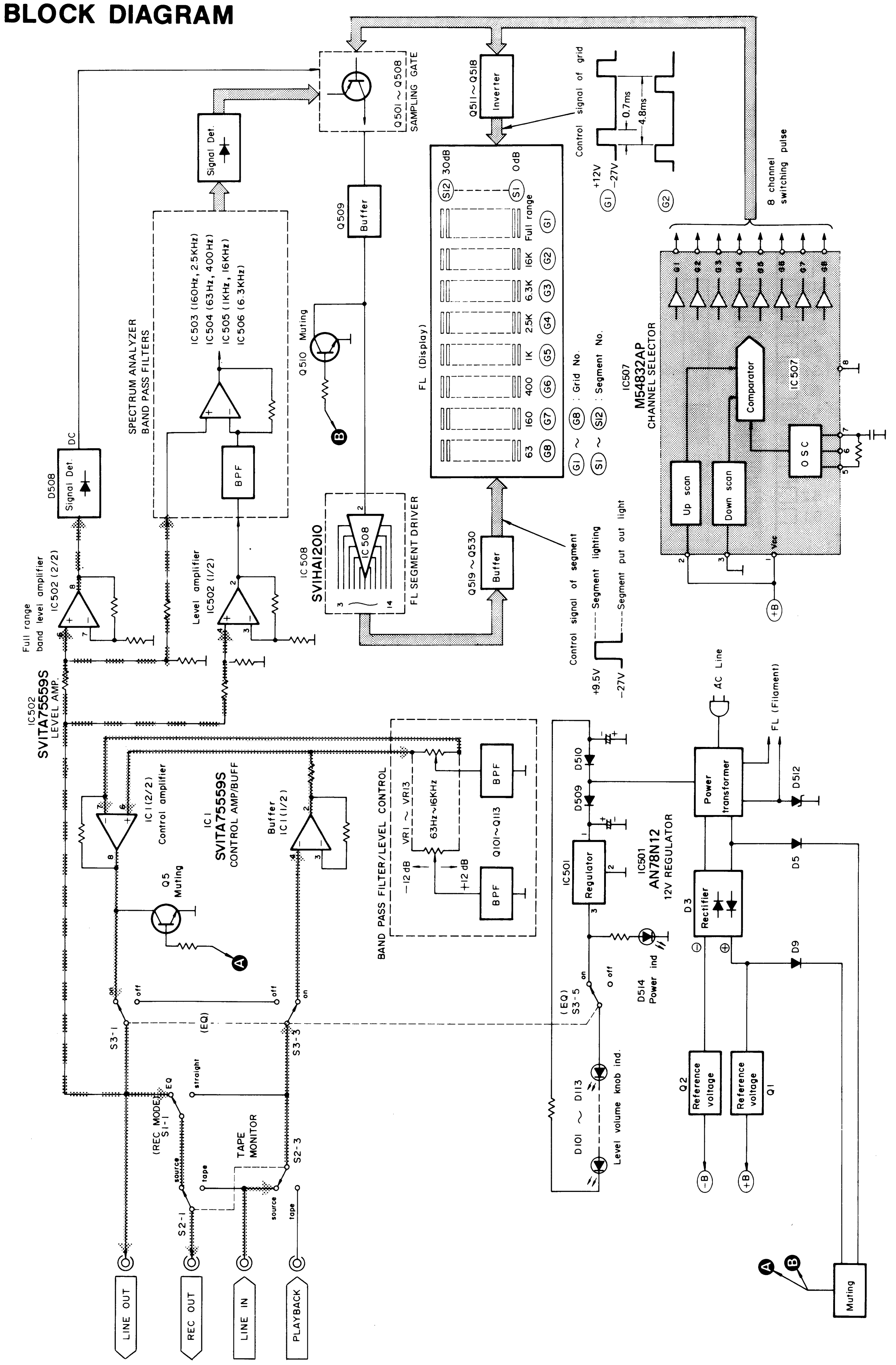

only
AC OUTLET
(UNSWITCHED)
AC 120V
(60 Hz)
White line for (MC)
BLU
ORN
BLK
RED
RED
POWER
(S4)
C1001
GROUND POINT
T1001
POWER TRANSFORMER
BRN
BRN
BLU
BLU
ORN
BLU
RED
BLK
RED
For F.R. Germany only
IC505
IC504
IC503
IC506
IC502
Q506
Q502
Q510
Q509
Q508
Q505
Q504
Q507
Q503
Q501
J8
J12
J14
J13
J16
D511
IC508
IC507
Q520
Q522
Q524
Q518
Q528
Q529
Q516
Q526
Q527
Q521
Q519
Q523
Q525
Q515
Q530
Q514
Q513
Q517
Q511
Q512
Q514 (Power indicator)
D512
D513
Z2
Z3
Z4
J2
J3
J1
J7
+12 dB
-12 dB
VR14 16kHz
VR12 6.3kHz
VR10 2.5kHz
VR8 1kHz
VR6 400Hz
VR4 160Hz
VR2 63Hz
VR13 16kHz
VR11 6.3kHz
VR9 2.5kHz
VR7 1kHz
VR5 400Hz
VR3 160Hz
VR1 63Hz
D114
D112
D110
D108
D106
D104
D102
D113
D111
D109
D107
D105
D103
D101
C75
SU8K 865AI (H1)
MADE IN JAPAN
Technics
BAND LEVEL CONTROL (R CH)
BAND LEVEL CONTROL (L CH)

C SPECTRUM ANALYZER BAND PASS FILTERS

D SPECTRUM ANALIZER DISPLAY (FL)

E BAND LEVEL VOLUME

BLOCK DIAGRAM


Q501 ~ Q508 SAMPLING GATE
Q511 ~ Q518 Inverter
Signal Det
Buffer
Q509
Q510 Muting
SPECTRUM ANALYZER BAND PASS FILTERS
IC503 (160Hz, 2.5KHz)
IC504 (63Hz, 400Hz)
IC505 (1KHz, 16KHz)
IC506 (6.3KHz)
BPF
DC
D508 Signal Det
Full range band level amplifier IC502 (2/2)
Level amplifier IC502 (1/2)
IC502 SVITA7555 9S LEVEL AMP
IC508 SVIHA12010 FL SEGMENT DRIVER
FL (Display)
S12 30dB
S1 0dB
Full range
63 160 400 1K 2.5K 6.3K 16K
G1 ~ G8 : Grid No.
S1 ~ S12 : Segment No.
Q519 ~ Q530 Buffer
Control signal of segment
Segment lighting
Segment put out light
+9.5V
-27V
Control signal of grid
+12V
-27V
0.7ms
4.8ms
8 channel switching pulse
IC507 M54832AP CHANNEL SELECTOR
Comparator
OSC
Up scan
Down scan
Vcc
IC1 (2/2) Control amplifier
IC1 SVITA7555 9S CONTROL AMP/BUFF
Buffer IC1 (1/2)
Q5 Muting
BAND PASS FILTER/LEVEL CONTROL
VR1 ~ VR13
63Hz ~ 16kHz
-12 dB
+12 dB
Q101 ~ Q113
BPF
D510
D509
IC501 Regulator
IC501 AN78N12 12V REGULATOR
D514 Power ind
Level volume knob ind.
D101 ~ D113
(EQ) S3-5
on off
Power transformer
AC Line
FL (Filament)
D512
D5
D3 Rectifier
D9
Q2 Reference voltage
Q1 Reference voltage
-B
+B
Muting
S3-1
S3-3
(EQ)
straight
(REC MODE) S1-1
EQ
tape
source
S2-1
TAPE MONITOR
S2-3
LINE OUT
REC OUT
LINE IN
PLAYBACK

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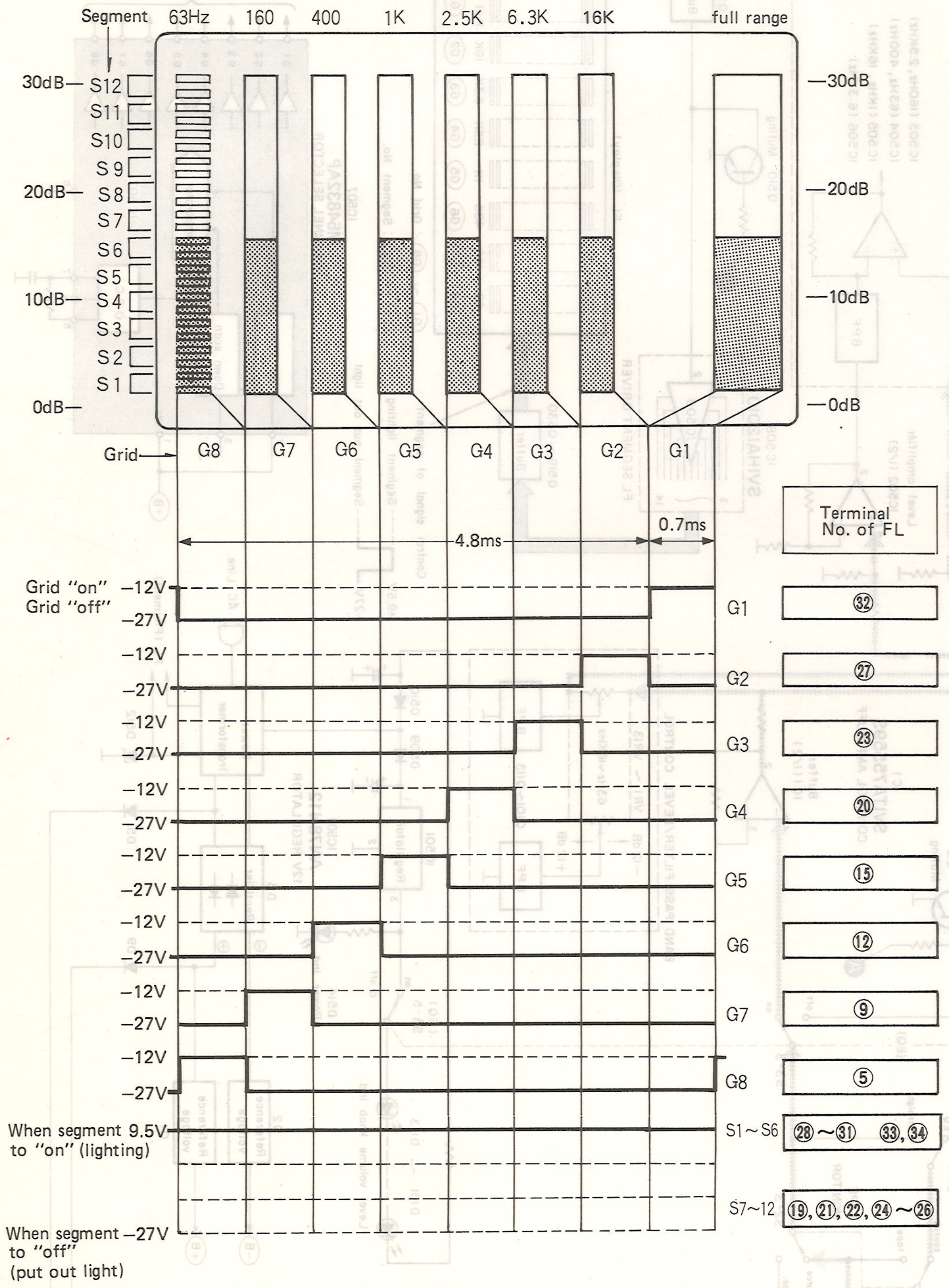
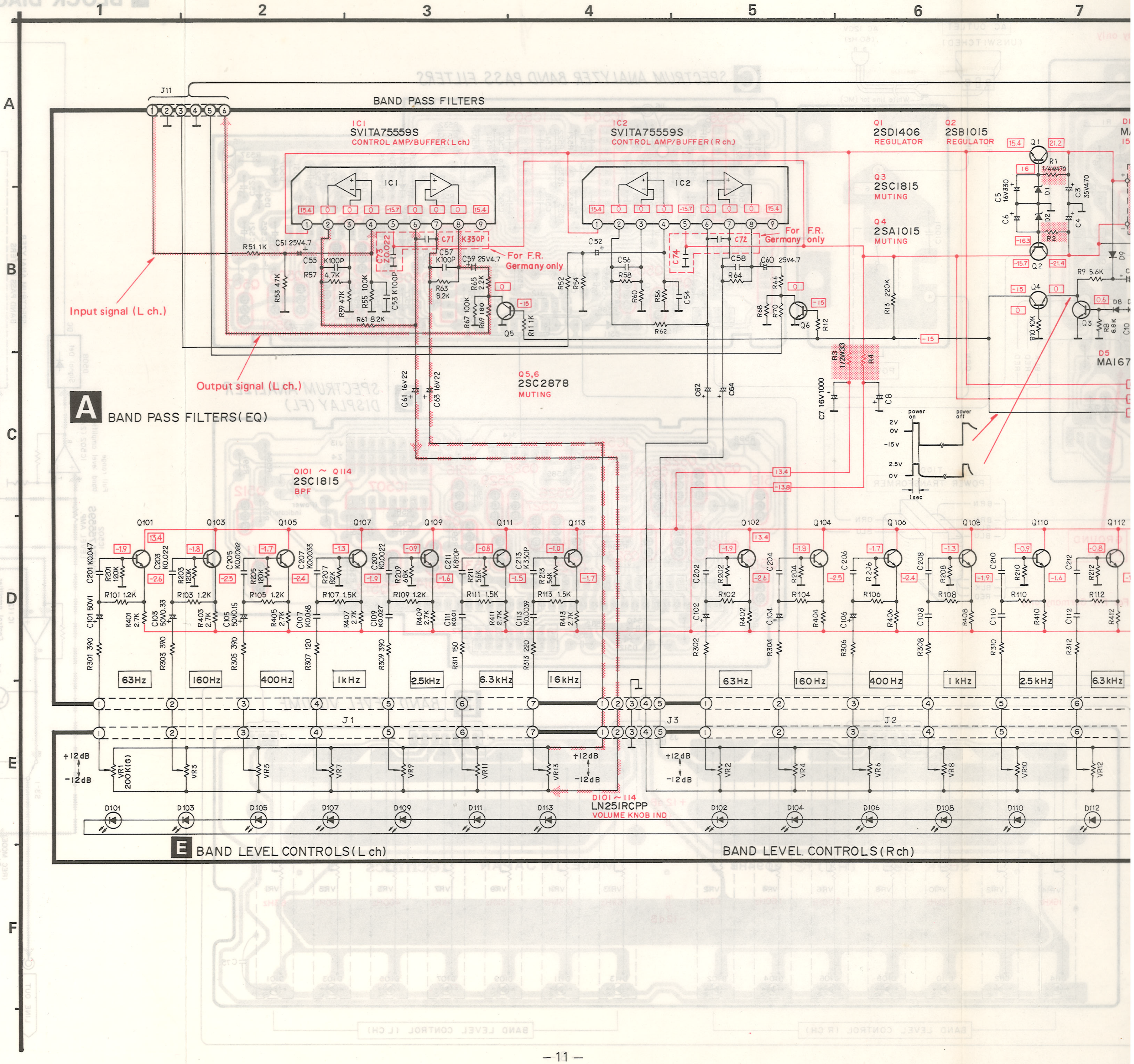
SCHEMATIC DIAGRAM

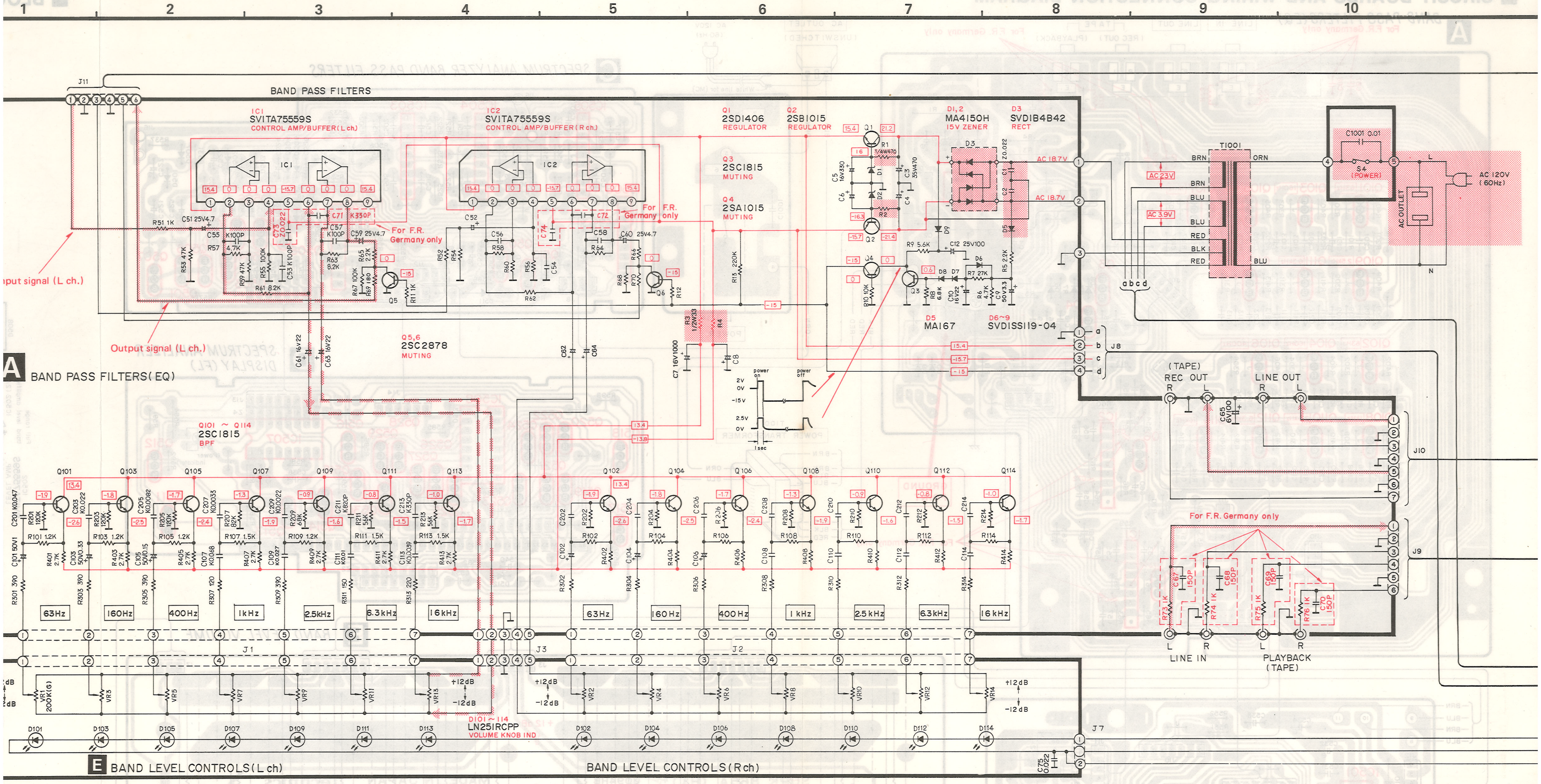
(This schematic diagram may be modified at any time with the development of new technology.)

- **Spectrum analyzer (Frequency level display) & terminal voltage of grid and segment**

Example

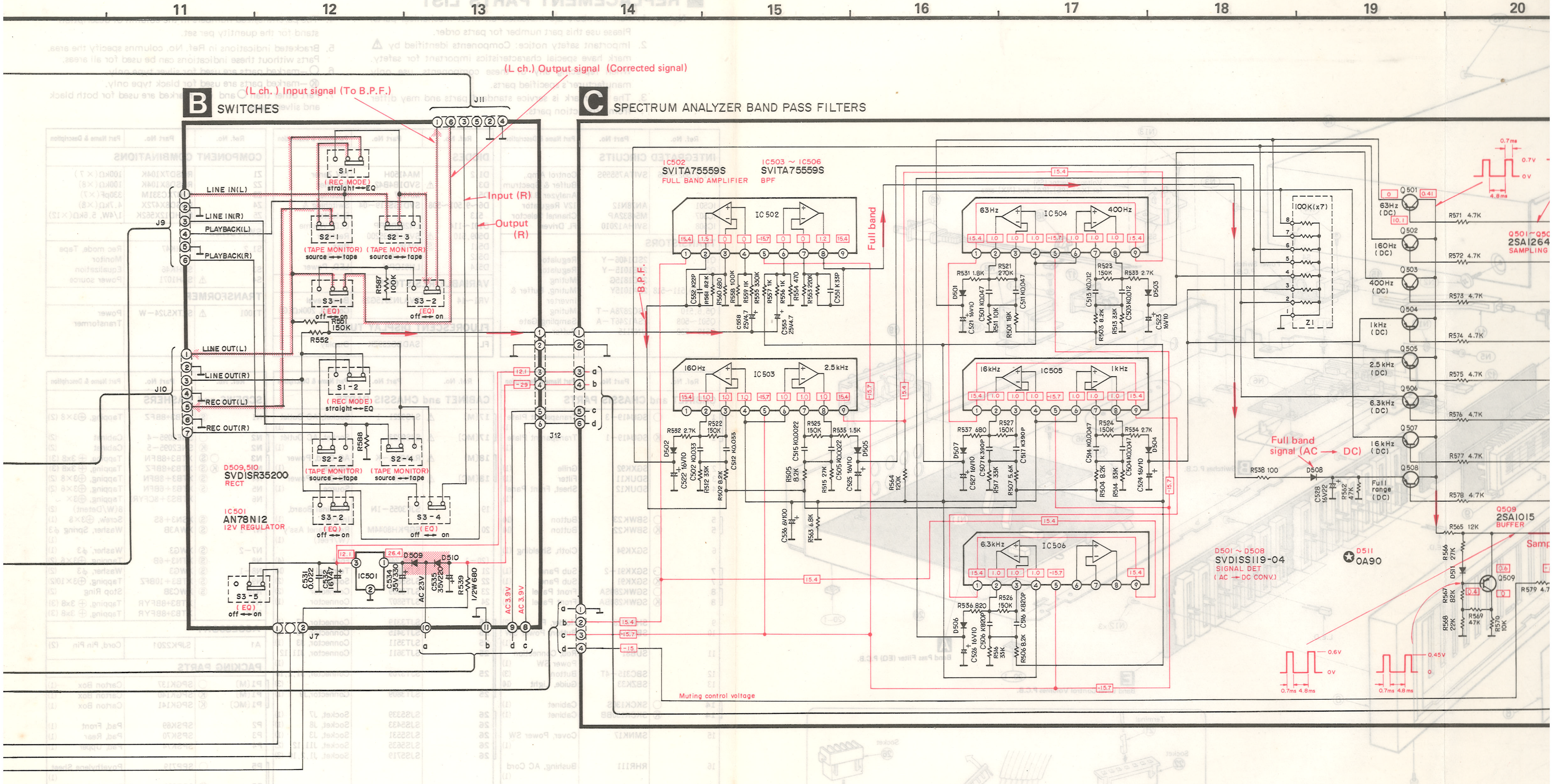

Segment
63Hz
160
400
1K
2.5K
6.3K
16K
full range
30dB
20dB
10dB
0dB
S12
S11
S10
S9
S8
S7
S6
S5
S4
S3
S2
S1
Grid
G8
G7
G6
G5
G4
G3
G2
G1
4.8ms
0.7ms
Terminal No. of FL
Grid "on" −12V
Grid "off" −27V
−12V
−27V
G1 ㉜
G2 ㉗
G3 ㉓
G4 ⑳
G5 ⑮
G6 ⑫
G7 ⑨
G8 ⑤
When segment 9.5V to "on" (lighting)
S1~S6 ㉘~㉛ ㉝,㉞
When segment −27V to "off" (put out light)
S7~12 ⑲,㉑,㉒,㉔~㉖


1
2
3
4
5
6
7
A
B
C
D
E
F
J11
BAND PASS FILTERS
IC1 SVITA75559S CONTROL AMP/BUFFER (L ch)
IC2 SVITA75559S CONTROL AMP/BUFFER (R ch)
Q1 2SD1406 REGULATOR
Q2 2SB1015 REGULATOR
Q3 2SC1815 MUTING
Q4 2SA1015 MUTING
For F.R. Germany only
Input signal (L ch.)
Output signal (L ch.)
Q5,6 2SC2878 MUTING
D5 MA167
power on
power off
1sec
A BAND PASS FILTERS (EQ)
Q101 ~ Q114 2SC1815 BPF
63Hz
160Hz
400Hz
1kHz
2.5kHz
6.3kHz
16kHz
J1
J2
J3
+12dB
−12dB
D101 ~ 114 LN251RCPP VOLUME KNOB IND
E BAND LEVEL CONTROLS (L ch)
BAND LEVEL CONTROLS (R ch)


1
2
3
4
5
6
7
8
9
10
J11
BAND PASS FILTERS
IC1
SVITA75559S
CONTROL AMP/BUFFER(L ch)
IC2
SVITA75559S
CONTROL AMP/BUFFER(R ch)
Q1
2SD1406
REGULATOR
Q2
2SB1015
REGULATOR
D1, 2
MA4150H
15V ZENER
D3
SVDIB4B42
RECT
Q3
2SC1815
MUTING
Q4
2SA1015
MUTING
For F.R. Germany only
Input signal (L ch.)
Output signal (L ch.)
Q5,6
2SC2878
MUTING
D5
MA167
D6~9
SVDISS119-04
T1001
C1001 0.01
S4 (POWER)
AC OUTLET
AC 120V (60Hz)
AC 18.7V
AC 23V
AC 3.9V
BRN
BLU
RED
BLK
ORN
J8
(TAPE)
REC OUT
LINE OUT
J10
J9
LINE IN
PLAYBACK (TAPE)
power on
power off
1sec
A BAND PASS FILTERS(EQ)
Q101 ~ Q114
2SC1815
BPF
63Hz
160Hz
400Hz
1kHz
2.5kHz
6.3kHz
16kHz
J1
J2
J3
J7
+12dB
-12dB
D101 ~ 114
LN251RCPP
VOLUME KNOB IND
E BAND LEVEL CONTROLS(L ch)
BAND LEVEL CONTROLS(R ch)

IMPORTANT SAFETY NOTICE

The shaded area on this schematic diagram incorporates special features important for protection from fire and electrical shock hazards.
When servicing, it is essential that only manufacturer's specified parts be used for the critical components in the shaded areas of the schematic.



11
12
13
14
15
16
17
18
19
20
(L ch.) Output signal (Corrected signal)
(L ch.) Input signal (To B.P.F.)
J11
Input (R)
Output (R)
S1-1 (REC MODE) straight ↔ EQ
S2-1 (TAPE MONITOR) source ↔ tape
S2-3 (TAPE MONITOR) source ↔ tape
S3-1 (EQ) off ↔ on
S3-2 (EQ) off ↔ on
R587 100K
R551 150K
R552
LINE IN(L)
LINE IN(R)
PLAYBACK(L)
PLAYBACK(R)
J9
LINE OUT(L)
LINE OUT(R)
REC OUT(L)
REC OUT(R)
J10
S1-2 (REC MODE) straight ↔ EQ
S2-2 (TAPE MONITOR) source ↔ tape
S2-4 (TAPE MONITOR) source ↔ tape
R588
S3-2 (EQ) off ↔ on
S3-4 (EQ) off ↔ on
D509,510 SVDISR35200 RECT
IC501 AN78N12 12V REGULATOR
S3-5 (EQ) off ↔ on
C531
C532
C534
C535 35V220
IC501
D509
D510
R539 1/2W 680
AC 23V
AC 3.9V
AC 3.9V
J7
J12
12.1
-29
26.4
IC502 SVITA75559S FULL BAND AMPLIFIER
IC503 ~ IC506 SVITA75559S BPF
IC 502
IC 503
IC 504
IC 505
IC 506
63Hz
400Hz
160Hz
2.5kHz
16kHz
1kHz
6.3kHz
B.P.F.
Full band
15.4
-15.7
-15
Muting control voltage
100K(×7)
Z1
Full band signal (AC → DC)
R538 100
D508
Q501 63Hz (DC)
Q502 160Hz (DC)
Q503 400Hz (DC)
Q504 1kHz (DC)
Q505 2.5kHz (DC)
Q506 6.3kHz (DC)
Q507 16kHz (DC)
Q508 Full range (DC)
R571 4.7K
R572 4.7K
R573 4.7K
R574 4.7K
R575 4.7K
R576 4.7K
R577 4.7K
R578 4.7K
Q501~Q50
2SA1264
SAMPLING
Q509 2SA1015 BUFFER
D501 ~ D508 SVDISS119-04 SIGNAL DET (AC → DC CONV.)
D511 OA90
R565 12K
R566 27K
R567 82K
R568 22K
R569 47K
R570 10K
R579 4.7
0.7ms 0.7V 0V 4.8ms
0.6V 0V 0.7ms 4.8ms
0.45V 0 0.7ms 4.8ms
Samp

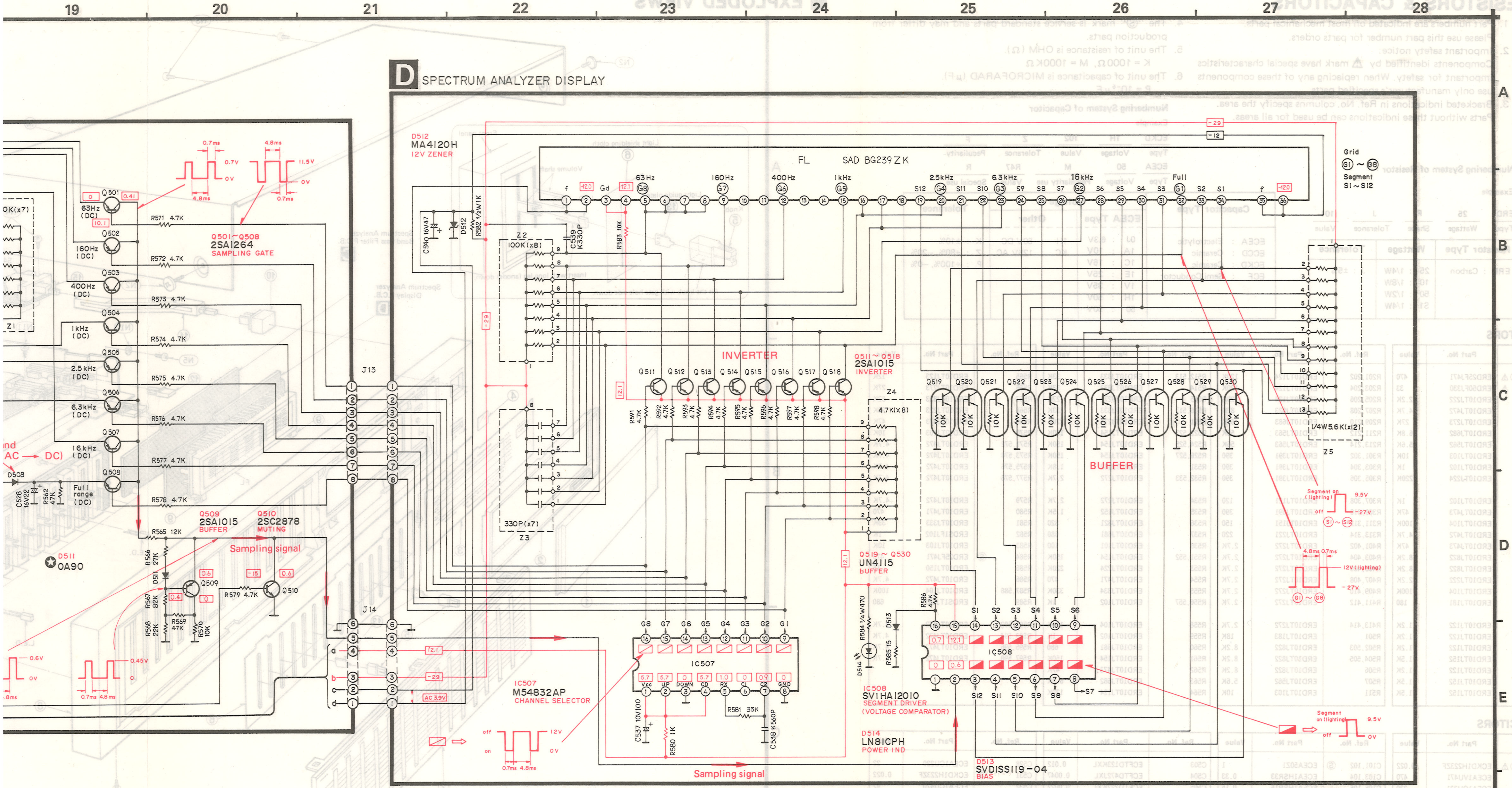
B SWITCHES

C SPECTRUM ANALYZER BAND PASS FILTERS

Notes:

1. **S1-1 ~S1-2:** Recording mode selector in **"EQ"** position.
   straight ↔ EQ
2. **S2-1 ~S2-4:** Tape-monitor selector in **"source"** position.
   source ↔ tape
3. **S3-1 ~S3-5:** Equalization switch in **"on"** position.
   on ↔ off
4. **S4:** Power source switch in **"on"** position.
   on ↔ off
5. [10] Indicated voltage values are standard values for the unit measured by the DC electronic circuit tester (high impedance) with the chassis taken standard.
6. Positive and Negative voltage supply line.
7. ▨ Signal line (Left channel)
8. The part No. of transistors, IC and diodes mentioned in the schematic diagram stand for production part No. Regarding the part No. with ✪ mark, the production part No. are different from the replacement part No. Therefore, when placing an order for replacement part, please use the part No. in the replacement part list.

D SPECTRUM ANALYZER DISPLAY


19
20
21
22
23
24
25
26
27
28
A
B
C
D
E
Q501
63Hz (DC)
Q502
160Hz (DC)
Q503
400Hz (DC)
Q504
1kHz (DC)
Q505
2.5kHz (DC)
Q506
6.3kHz (DC)
Q507
16kHz (DC)
Q508
Full range (DC)
R571 4.7K
R572 4.7K
R573 4.7K
R574 4.7K
R575 4.7K
R576 4.7K
R577 4.7K
R578 4.7K
Q501~Q508
2SA1264
SAMPLING GATE
0.7ms
4.8ms
0.7V
0V
11.5V
Q509
2SA1015
BUFFER
Q510
2SC2878
MUTING
Sampling signal
D511
OA90
R565 12K
R566 27K
R567 82K
R568 22K
R569 47K
R570 10K
R579 4.7K
R562 47K
C528 16V22
D508
AC → DC)
J13
J14
D512
MA4120H
12V ZENER
C540 16V47
R582 1/2W1K
Z2
100K(x8)
C539 K330P
R583 10K
Z3
330P(x7)
FL
SAD BG239ZK
63Hz
160Hz
400Hz
1kHz
2.5kHz
6.3kHz
16kHz
Full
Gd
G1 ~ G8
Grid
Segment
S1 ~ S12
INVERTER
Q511
Q512
Q513
Q514
Q515
Q516
Q517
Q518
R591 4.7K
R592 4.7K
R593 4.7K
R594 4.7K
R595 4.7K
R596 4.7K
R597 4.7K
R598 4.7K
Q511 ~ Q518
2SA1015
INVERTER
Z4
4.7K(x8)
Q519
Q520
Q521
Q522
Q523
Q524
Q525
Q526
Q527
Q528
Q529
Q530
10K
BUFFER
Q519 ~ Q530
UN4115
BUFFER
Z5
1/4W5.6K(x12)
Segment on (lighting)
9.5V
off
-27V
4.8ms
0.7ms
12V (lighting)
IC507
M54832AP
CHANNEL SELECTOR
C537 10V100
R580 1K
R581 33K
C538 K560P
IC508
SVI HA12010
SEGMENT DRIVER
(VOLTAGE COMPARATOR)
R584 1/4W470
R585 15
R586 4.7K
D513
SVDISS119-04
BIAS
D514
LN81CPH
POWER IND
AC 3.9V
-29
-12
-12.0
12.1
12V
0V
on
off
Sampling signal

RESISTORS & CAPACITORS

Notes:
1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
4. The "Ⓢ" mark is service standard parts and may differ from production parts.
5. The unit of resistance is OHM (Ω). K = 1000Ω, M = 1000KΩ
6. The unit of capacitance is MICROFARAD (μF). P = 10^{-6}μF

Numbering System of Capacitor

Example

ECKD	1H	102	Z	F
Type	Voltage	Value	Tolerance	Peculiarity
ECEA	50	M	R47	R
Type	Voltage	Peculiarity use	Value	Special use

Numbering System of Resistor

Example

ERD	25	F	J	101
Type	Wattage	Shape	Tolerance	Value

Resistor Type	Wattage	Tolerance
ERD : Carbon	25 : 1/4W	J : ±5%
	10 : 1/8W	
	50 : 1/2W	
	S1 : 1/4W	

Capacitor Type	Voltage		Tolerance
	ECEA Type	Other	
ECEA : Electrolytic	0J : 6.3V	1H : 50V DC	K : ±10%
ECCD : Ceramic	1A : 10V	KC : 125V AC	Z : +80%, –20%
ECKD : Ceramic	1C : 16V		P : +100%, –0%
ECF : Semi Conductor	1E : 25V		
	1V : 35V		
	1H : 50V		
	50 : 50V		

• RESISTORS

Ref. No.	Part No.	Value
R1,2 Ⓢ⚠	ERD25FJ471	470
R3,4 ⚠	ERD50FJ330	33
R5	ERD10TJ222	2.2K
R6	ERD10TJ472	4.7K
R7	ERD10TJ273	27K
R8	ERD10TJ682	6.8K
R9	ERD10TJ562	5.6K
R10	ERD10TJ103	10K
R11,12	ERD10TJ102	1K
R13	ERD10TJ224	220K
R51,52	ERD10TJ102	1K
R53,54	ERD10TJ473	47K
R55,56	ERD10TJ104	100K
R57,58	ERD10TJ472	4.7K
R59,60	ERD10TJ473	47K
R61,62	ERD10TJ822	8.2K
R63,64	ERD10TJ822	8.2K
R65,66	ERD10TJ222	2.2K
R67,68	ERD10TJ104	100K
R69,70	ERD10TJ181	180
R101,102	ERD10TJ122	1.2K
R103,104	ERD10TJ122	1.2K
R105,106	ERD10TJ122	1.2K
R107,108	ERD10TJ152	1.5K
R109,110	ERD10TJ122	1.2K
R111,112	ERD10TJ152	1.5K
R113,114	ERD10TJ152	1.5K

Ref. No.	Part No.	Value
R201,202	ERD10TJ124	120K
R203,204	ERD10TJ124	120K
R205,206	ERD10TJ124	120K
R207,208	ERD10TJ823	82K
R209,210	ERD10TJ683	68K
R211,212	ERD10TJ563	56K
R213,214	ERD10TJ563	56K
R301,302	ERD10TJ391	390
R303,304	ERD10TJ391	390
R305,306	ERD10TJ391	390
R307,308	ERD10TJ121	120
R309,310	ERD10TJ391	390
R311,312	ERD10TJ151	150
R313,314	ERD10TJ221	220
R401,402	ERD10TJ272	2.7K
R403,404	ERD10TJ272	2.7K
R405,406	ERD10TJ272	2.7K
R407,408	ERD10TJ272	2.7K
R409,410	ERD10TJ272	2.7K
R411,412	ERD10TJ272	2.7K
R413,414	ERD10TJ272	2.7K
R501	ERD10TJ183	18K
R502,503	ERD10TJ822	8.2K
R504,505	ERD10TJ822	8.2K
R506	ERD10TJ822	8.2K
R507	ERD10TJ562	5.6K
R511	ERD10TJ103	10K

Ref. No.	Part No.	Value
R512,513	ERD10TJ333	33K
R514	ERD10TJ333	33K
R515	ERD10TJ273	27K
R516,517	ERD10TJ333	33K
R521	ERD10TJ274	270K
R522,523	ERD10TJ154	150K
R524,525	ERD10TJ154	150K
R526,527	ERD10TJ154	150K
R531	ERD10TJ182	1.8K
R532,533	ERD10TJ272	2.7K
R534	ERD10TJ272	2.7K
R535	ERD10TJ152	1.5K
R536	ERD10TJ821	820
R537	ERD10TJ681	680
R538	ERD10TJ101	100
R551,552	ERD10TJ154	150K
R553	ERD10TJ224	220K
R554	ERD10TJ471	470
R555	ERD10TJ334	330K
R556,557	ERD10TJ102	1K
R558	ERD10TJ104	100K
R559	ERD10TJ102	1K
R560	ERD10TJ681	680
R561	ERD10TJ154	150K
R562	ERD10TJ473	47K
R563	ERD10TJ682	6.8K
R564	ERD10TJ124	120K

Ref. No.	Part No.	Value
R565	ERD10TJ123	12K
R566	ERD10TJ273	27K
R567	ERD10TJ823	82K
R568	ERD10TJ223	22K
R569	ERD10TJ473	47K
R570	ERD10TJ103	10K
R571,572	ERD10TJ472	4.7K
R573,574	ERD10TJ472	4.7K
R575,576	ERD10TJ472	4.7K
R577,578	ERD10TJ472	4.7K
R579	ERD10TJ472	4.7K
R580	ERD10TJ471	470
R581	ERD10TJ333	33K
R582	ERDS1FJ102	1K
R583	ERD10TJ103	10K
R584 Ⓢ	ERD25FJ471	470
R585	ERD10TJ150	15
R586	ERD10TJ472	4.7K
R587,588	ERD10TJ104	100K
R589	ERDS1TJ681	680
R591,592	ERD10TJ472	4.7K
R593,594	ERD10TJ472	4.7K
R595,596	ERD10TJ472	4.7K
R597,598	ERD10TJ472	4.7K

• CAPACITORS

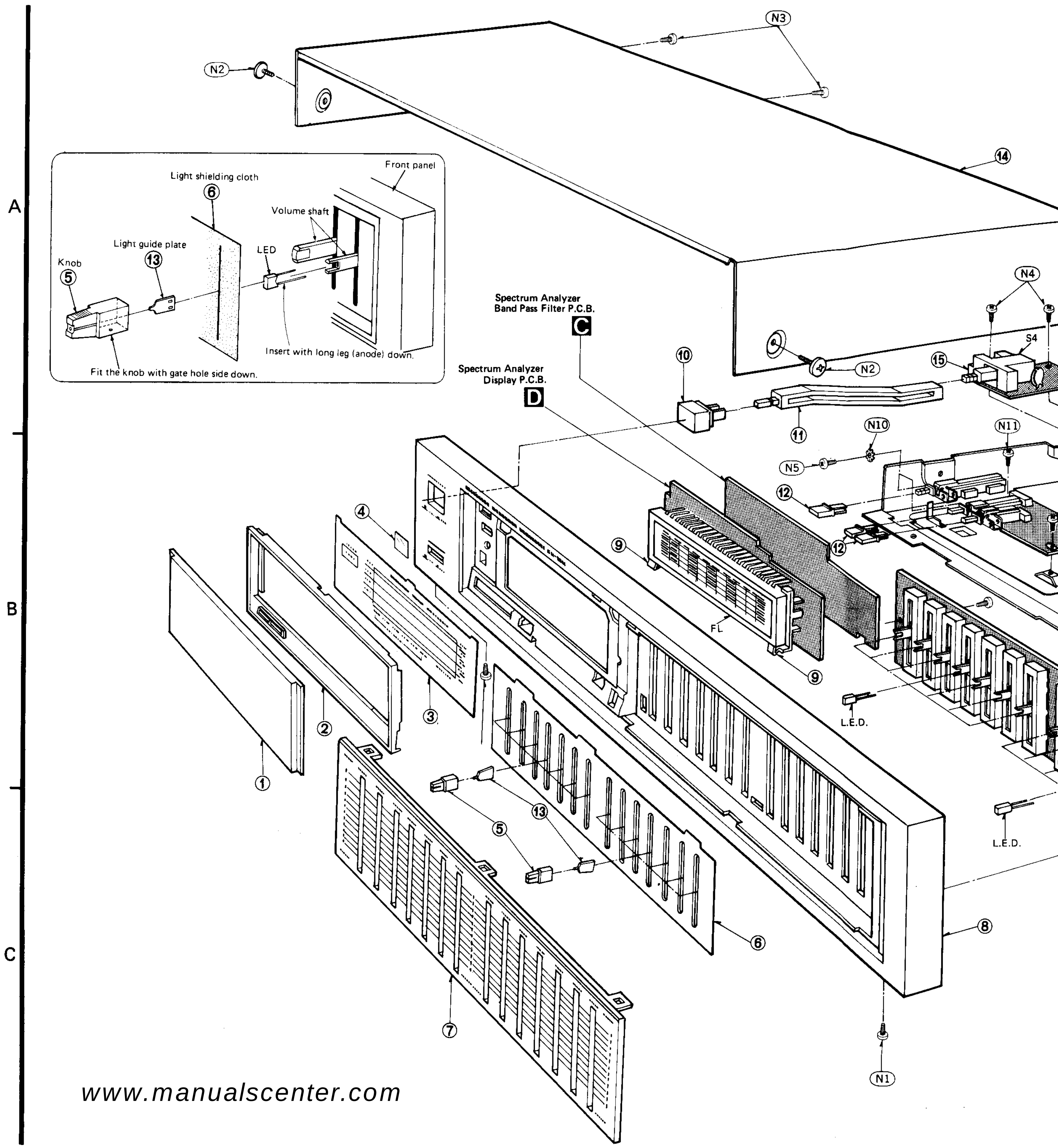
Ref. No.	Part No.	Value
C1,2 Ⓢ⚠	ECKD1H223ZF	0.022
C3,4	ECEA1VU471	470
C5,6	ECEA1CU331	330
C7,8	ECEA1CU102	1000
C9 Ⓢ	ECEA50Z3R3	3.3
C10	ECEA1CU220	22
C12	ECEA1EU101	100
C51,52	ECEA1EU4R7	4.7
C53,54 Ⓢ	ECCD1H101K	100P
C55,56 Ⓢ	ECCD1H101K	100P
C57,58 Ⓢ	ECCD1H101K	100P
C59,60	ECEA1EU4R7	4.7
C61,62	ECEA1CU220	22
C63,64	ECEA1CU220	22
C65	ECEA0JU101	100
C75 Ⓢ	ECKD1H223ZF	0.022

Ref. No.	Part No.	Value
C101,102 Ⓢ	ECEA50Z1	1
C103,104	ECEA1HSR33	0.33
C105,106	ECEA1HSR15	0.15
C107,108	ECFTD683KXL	0.068
C109,110	ECFTD273KXL	0.027
C111,112	ECFTD103KXL	0.01
C113,114	ECFTD392KXL	0.0039
C201,202	ECFTD473KXL	0.047
C203,204	ECFTD223KXL	0.022
C205,206	ECFTD822KXL	0.0082
C207,208	ECFTD332KXL	0.0033
C209,210	ECFTD222KXL	0.0022
C211,212 Ⓢ	ECKD1H821KB	820P
C213,214 Ⓢ	ECKD1H331KB	330P
C501	ECFTD473KXL	0.047
C502	ECFTD333KXL	0.033

Ref. No.	Part No.	Value
C503	ECFTD123KXL	0.012
C504	ECFTD472JXL	0.0047
C505	ECFTD222KXL	0.0022
C506 Ⓢ	ECKD1H821KB	820P
C507 Ⓢ	ECKD1H391KB	390P
C511	ECFTD473KXL	0.047
C512	ECFTD333KXL	0.033
C513	ECFTD123KXL	0.012
C514	ECFTD472JXL	0.0047
C515	ECFTD222KXL	0.0022
C516 Ⓢ	ECKD1H821KB	820P
C517 Ⓢ	ECKD1H391KB	390P
C521,522	ECEA1CU100	10
C523,524	ECEA1CU100	10
C525,526	ECEA1CU100	10
C527	ECEA1CU100	10

Ref. No.	Part No.	Value
C528	ECEA1CU220	22
C531 Ⓢ	ECKD1H223ZF	0.022
C532	ECEA1CU470	47
C534	ECEA1VU331	330
C535	ECEA1VU221	220
C536	ECEA0JU101	100
C537	ECEA1AK101	100
C538 Ⓢ	ECKD1H561KB	560P
C539 Ⓢ	ECKD1H331KB	330P
C540	ECEA1CU470	47
C551 Ⓢ	ECCD1H330K	33P
C552 Ⓢ	ECCD1H220K	22P
C553,554	ECEA1EU4R7	4.7
C1001 ⚠	ECKDKC103PF2	0.01

EXPLODED VIEWS


A
B
C
N3
N2
⑭
Front panel
Light shielding cloth
⑥
Volume shaft
Light guide plate
⑬
LED
Knob
⑤
Insert with long leg (anode) down.
Fit the knob with gate hole side down.
N4
Spectrum Analyzer Band Pass Filter P.C.B.
C
Spectrum Analyzer Display P.C.B.
D
⑩
N2
⑮
S4
⑪
N10
N11
N5
⑫
④
⑨
⑫
FL
⑨
L.E.D.
②
③
①
⑤
⑬
L.E.D.
⑥
⑧
⑦
N1

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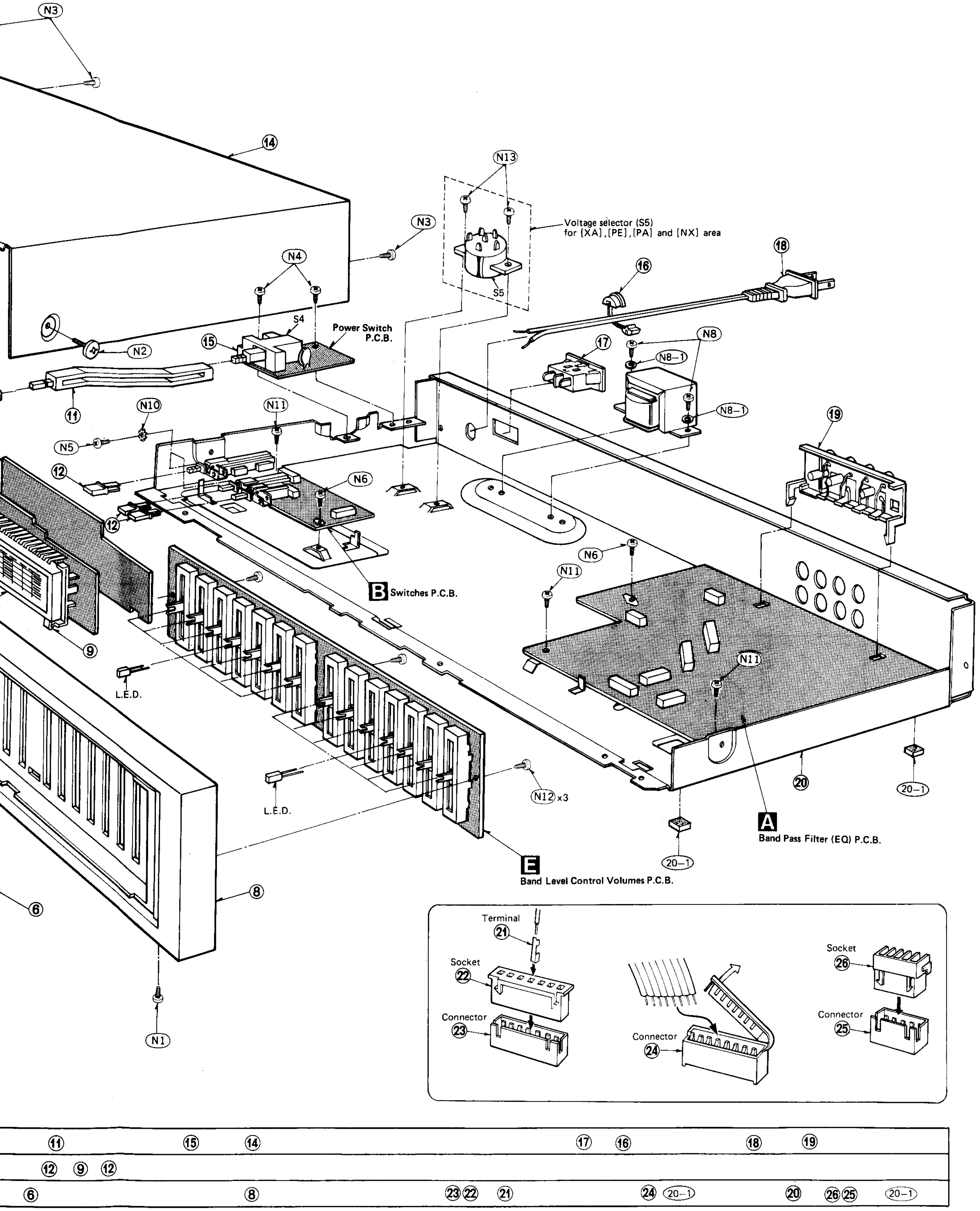
A	⑤ ⑬ ⑥ ⑩ ⑪ ⑮ ⑭
B	① ② ④ ③ ⑨ ⑫ ⑨ ⑫
C	⑦ ⑤ ⑬ ⑥ ⑧



REPLACEMENT PARTS LIST

Notes:

1. Part numbers are indicated on most mechanical parts. Please use this part number for parts order.
2. Important safety notice: Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.
3. The Ⓢ mark is service standard parts and may differ from production parts.
4. The parenthesized numbers in the column of description stand for the quantity per set.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.
6. ○—marked parts are used for silver type only. Ⓚ—marked parts are used for black type only.
7. Part other than ○ and Ⓚ—marked are used for both black and silver types.

Ref. No.	Part No.	Part Name & Description
INTEGRATED CIRCUITS		
IC1,2,502~506	SVITA75559S	Control Amp., Buffer & Spectrum Analyzer B.P.F.
IC501	AN78N12	12V Regulator
IC507	M54832AP	Channel Selector
IC508	SVIHA12010	FL Driver
TRANSISTORS		
Q1	2SD1406−Y	Regulator
Q2	2SB1015−Y	Regulator
Q3	2SC1815G	Muting
Q4,509,511~518	2SA1015Y	Muting, Buffer & Inverter
Q5,6,510	2SC2878A−T	Muting
Q501~508	2SA1246T−A	Sampling Gate
Q519~530	UN4115	Buffer

Ref. No.	Part No.	Part Name & Description
DIODES		
D1,2	MA4150H	15V Zener
D3 ⚠	SVD1B4B42	Rectifier
D5	MA167	Rectifier
D6~9,501~508 513	SVD1SS119−04	Switching & Detector
D101~114	LN251RCPP	LED, Volume
D509,510 ⚠	SVD1SR35200	Rectifier
D511 Ⓢ	20A90	Bias
D512	MA4120H	12V Zener
D514	LN81CPH	LED, Power
VARIABLE RESISTORS		
VR1~14	EVAJN3J15G25	Band Level Control, 200kΩ(G)
FLUORESCENT DISPLAY TUBE		
FL	SADBG239ZK	Display

Ref. No.	Part No.	Part Name & Description
COMPONENT COMBINATIONS		
Z1	RGSD7X104K	100kΩ(× 7)
Z2	RGSD8X104K	100kΩ(×8)
Z3	PJB7XC331M	330pF(×7)
Z4	RGSD8X472X	4.7kΩ(×8)
Z5	RGHD12X562K	1/4W, 5.6kΩ(×12)
SWITCHES		
S1,2	SSHK47	Rec mode, Tape Monitor
S3	SSHK46	Equalization
S4 ⚠	SSH1071	Power source
TRANSFORMER		
T1001 ⚠	SLTK5J24−W	Power Transformer

Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS		
1 ○	SGU419−3	Transparent Plate (1)
1 Ⓚ	SGU419−1	Transparent Plate (1)
2	SGXK92	Grille (1)
3	SDUK11	Filter (1)
4	SDUK12	Sheet, Front Panel (1)
5 ○	SBWK23	Button (14)
5 Ⓚ	SBWK22	Button (14)
6	SGXK94	Cloth, Shielding (1)
7 ○	SGXK91−2	Sub Panel (1)
7 Ⓚ	SGXK91	Sub Panel (1)
8 ○	SGWK280SA	Front Panel (1)
8 Ⓚ	SGWK280BA	Front Panel (1)
9	SHR9728	Holder, FL (2)
10	SBC666	Button, Power SW (1)
11	SUB81	Rod, Connection Power SW (1)
12	SBC315−4T	Button (3)
13	SBZK33	Guide, Light (14)
14 ○	SKCK130S	Cabinet (1)
14 Ⓚ	SKCK130BB	Cabinet (1)
15	SMNK17	Cover, Power SW (1)
16	RHR111	Bushing, AC Cord (1)

Ref. No.	Part No.	Part Name & Description
CABINET and CHASSIS PARTS		
17〔M〕 ⚠	SJS9221−1	Socket, AC Outlet (1)
17〔MC〕 ⚠	SJS9223	Socket, AC Outlet (1)
18〔M〕 ⚠	RJA9YA−K	AC Cord, Power Source (1)
18〔MC〕 ⚠	SJA169	AC Cord, Power Source (1)
19	SJF3055−1N	Terminal Board, In/Out (1)
20	SGPKH8044M	Rear Panel Ass'y (W/Feet) (1)
〔20−1	〔SHS2481	Foot (4)
21	SJT783	Terminal (14)
22	SJS5811	Socket (2)
23	SJT3809	Connector (2)
24	SJT5807	Connector (1)
25	SJT3319	Connector, J7 (1)
25	SJT3415	Connector, J8 (1)
25	SJT3511	Connector, J3 (1)
25	SJT3611	Connector, J11,12 (1)
25	SJT3709	Connector, J1,2,10 (3)
25	SJT3809	Connector,J9 (1)
26	SJS5339	Socket, J7 (1)
26	SJS5433	Socket, J8 (1)
26	SJS5531	Socket, J3 (1)
26	SJS5635	Socket, J11,12 (2)
26	SJS5719	Socket, J1,2,10 (3)

Ref. No.	Part No.	Part Name & Description
SCREWS and WASHERS		
N1 Ⓢ	XTB3+8BFZ	Tapping, ⊕3×8 (2)
N2 ○	SNE2095−4	Cabinet (2)
N2 Ⓚ	SNE2095−5	Cabinet (2)
N3 ○Ⓢ	XTB3+8BFN	Tapping, ⊕ 3x8 (3)
N3 ⓀⓈ	XTB3+8BFZ	Tapping, ⊕ 3x8 (3)
N4 Ⓢ	XTB3+8BFN	Tapping, ⊕3×8 (2)
N5 Ⓢ	XTB3+6BFN	Tapping, ⊕3×6 (2)
N6	XTBS3+8CFYR1	Tapping, ⊕3× 8(W/Detent) (2)
N7 Ⓢ	XSN3+8S	Screw, ⊕3×8 (1)
N7−1 Ⓢ	XWA3B	Washer, Spring ϕ3 (1)
N7−2 Ⓢ	XWG3	Washer, ϕ3 (1)
N8 Ⓢ	XTN3+6B	Tapping, ⊕3×6 (2)
N8−1 Ⓢ	XWG3	Washer, ϕ3 (2)
N9 Ⓢ	XTB3+10BFZ	Tapping, ⊕3×10(2)
N10 Ⓢ	XWC3B	Stop Ring (2)
N11	XTB3+8BFYR	Tapping, ⊕ 3x8 (3)
N12	XTB3+8BFYR	Tapping, ⊕ 3x8 (3)
ACCESSORY		
A1	SJPK2201	Cord, Pin Pin (2)
PACKING PARTS		
P1〔M〕 ○	SPGK137	Carton Box (1)
P1〔M〕 Ⓚ	SPGK140	Carton Box (1)
P1〔MC〕 Ⓚ	SPGK141	Carton Box (1)
P2	SPSK69	Pad, Front (1)
P3	SPSK70	Pad, Rear (1)
P4	SPSK74	Pad, Upper (1)
P5 ○	SPP719	Poyethylene Sheet (1)
P5 Ⓚ	SPP659	Poyethylene Sheet (1)
P6〔M〕	SQFK10071	Instruction Book (1)
P6〔MC〕	SQFK10072	Instruction Book (1)

[M] only
*** SD-7170E(SC-7170E)**
SU-Z800, ST-Z400, RS-B50
SL-QL5, SH-8044

Outer Carton Box	SPG5056
Spacer	SPS4497

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